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LIFE AND LABOUR

OF THE

PEOPLE IN LONDON

THE preceding portion of this work, originally issued as two volumes with an Appendix, was subsequently republished in a revised shape as four volumes, but the matter contained in the new edition is practically identical with that in the old. The earlier form of publication has now been abandoned, and consequently the present volume (V.) is a direct continuation of both the previous editions.]

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LIFE AND LABOUR OF THE PEOPLE IN LONDON

EDITED BY

CHARLES BOOTH

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VOLUME V

POPULATION CLASSIFIED BY TRADES

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INTRODUCTION

INTRODUCTION.

Classification of the Population of London.

In the introduction to my first volume it was pointed out that a double method of inquiry was needed, in order that the condition of the people might be tested in two ways, and the facts be ascertained, first, as to how they live, and next, as to how they work.

The first of these two methods, although carried out for the whole of London with sufficient fulness in my first and second volumes, was felt to require the check afforded by statistics obtained in a different manner; the second test was, save in a few exceptional cases, left on one side until I could make use of the more recent and comprehensive statistical basis to be afforded by the occupation returns of the Census of 1891.

Thanks to the kindness of the Registrar-General my hopes in this respect have been fulfilled; and I have been permitted to make a very complete use of the census figures in classifying the people of London.*

In the Census of 1891, each head of family or occupier living in less than five rooms was asked to state the number of rooms occupied; and, in London at least, this information was in most instances obtained by the enumerators. The result is embodied in the Report lately issued by the Registrar-General, showing that there were 630,569 occupied tenements of less than five rooms, and giving the

* In thanking the Registrar-General for the great courtesy he has shown me in this matter, I perhaps ought to say that while supplying me with all the information I needed for my purpose, he has never placed in my hands any original documents, or supplied any of the facts, except in such form as to preclude all possibility of individual identification.

following particulars as to the numbers of persons compared to the number of rooms in each tenement:—

Rooms in Tenement.	Number of Tenements with less than Five Rooms.	Number of Occupants of each Tenement.					
		One.	Two.	Three.	Four.	Five.	Six.
1	172,502	60,114	55,766	29,005	16,111	7,409	2,871
2	189,707	16,106	46,075	40,168	32,486	24,013	15,526
3	153,189	5,522	27,246	29,151	26,796	22,657	17,293
4	115,171	1,864	12,049	16,645	18,896	18,175	16,294
Total ...	630,569	83,606	141,136	114,969	94,289	72,254	51,984

Rooms.	Number of Occupants of each Tenement (*continued*).					
	Seven.	Eight.	Nine.	Ten.	Eleven.	Twelve or more.
1	879	231	72	27	10	7
2	8,863	4195	1590	488	138	59
3	11,953	7078	3446	1377	470	200
4	12,801	8952	5203	2573	1150	569
Total ...	34,496	20,456	10,311	4465	1768	835

It must be noted that by "head of family" is meant anyone claiming to fill up an independent return or "householder's schedule." The "house" indirectly referred to may be but one room, and the household its single occupant; but boarders do not usually expect or obtain separate schedules, and thus as a rule it may be taken that those by whom or for whom the kitchen fire is used form one census family.

The method which I have adopted in re-stating the facts for the purposes of this classification is as follows: So far as the population are living in less than five rooms per family, the classification is based on the number of persons to each room; so far as they are employers of domestic indoor servants, it rests on the number of persons served to each servant; while those who live in five or more rooms, but keep no servants, form a central class.

On this plan those living in each district, or engaged in each trade, fall into three broad divisions, which again may be sub-divided as below :—

I. Lower Class—
- (1.) 4 or more persons to each room
- (2.) 3 and under 4 persons to each room
- (3.) 2 ,, 3 ,,
- (4.) 1 ,, 2 ,,

II. Central Class—
- (5.) Less than 1 person to each room

} Families occupying less than 5 rooms.

Families occupying 5 rooms or more without servants

III. Upper Class—
- (*a.*) 4 or more persons to 1 servant
- (*b.*) 3 or less with 1 servant; 4 ,, more with 2 servants
- (*c.*) 3 ,, less ,, 2 ,,; 5 ,, more ,, 3 ,,
- (*d.*) 3 ,, 4 ,, 3 ,,; 5 ,, 6 ,, 4 ,,; 7 ,, more ,, 5 ,,
- (*e.*) 1 ,, 2 with 3 servants; 3 ,, 4 ,, 4 ,,; 5 ,, 6 ,, 5 ,,; 7 ,, more with 6 servants
- (*f.*) 1 ,, 2 with 4 servants; 3 ,, 4 ,, 5 ,,; 5 ,, 6 ,, 6 ,,; 6 ,, 7 ,, 7 ,, — and other families where number of servants about equals that of members of the family
- (*g.*) 1 ,, 2 ,, 5 ,,; 3 ,, 4 ,, 6 ,,; 4 ,, 5 ,, 7 ,, — and other families with 8 or more servants, where members of family equal the number of servants
- (*h.*) 1 ,, 2 ,, 6 ,,; 1, 2, or 3 persons with 7 servants; And all families with more than 8 servants, where the members of family are less in number than the servants

} Families employing domestic indoor servants.

In the central class I have included on the one hand, those who, though occupying less than five rooms, are fewer in family than the number of rooms occupied, and on the other hand have counted also those who, though keeping one servant, are not less than four in family. For the former are fully as well housed, and the latter are in very much the same social position, as those who without servants occupy a house of five or more rooms.

The above classification embraces the whole population in families as they live, leaving outside of it only the inmates of institutions, hotels, &c. It can be applied equally well to the whole population or to any district or trade, or if desired to any trade in any district. In it every individual inhabitant of London has his place.

There are 127 registration sub-districts in London; some of these, being at once small, similar in character and contiguous, I have combined, making finally 114 local divisions suitable for my purpose. As to trades, the census enumerates nearly 350, but many of these apply hardly at all to London, and by combining such as do not demand separate treatment, I have reduced that number to about ninety trades or groups of trades.

The population to be dealt with consists in all of nearly a million families, which, excluding servants, are of the following sizes :—

93,650	consist of	1 person	=	93,650 persons.
177,073	,,	2 persons	=	354,146 ,,
159,282	,,	3 ,,	=	477,846 ,,
140,715	,,	4 ,,	=	562,860 ,,
114,991	,,	5 ,,	=	574,955 ,,
88,894	,,	6 ,,	=	533,364 ,,
63,139	,,	7 ,,	=	441,973 ,,
41,034	,,	8 ,,	=	328,272 ,,
24,028	,,	9 ,,	=	216,252 ,,
12,874	,,	10 ,,	=	128,740 ,,
11,086	,,	over 10 ,,	=	136,056 ,,

Total.....926,766*	3,848,114
Institutions, &c. (excluding servants) ...	157,771
Servants in families.....	186,701
Servants in institutions, &c.	9,633
Servants in charge of houses (family absent)	9,524
	4,211,743

* The "Census of 1891" (Vol. II., p. 20) shows there were 937,606 occupied tenements in London, as against the 926,766 heads of families here returned. A small part of this discrepancy is due to error on our part in abstracting

As to birthplaces of heads of families, there were :—

Born in London.....461,627 or 49·8 per cent.
,, out of London .....465,139 ,, 50·2 ,,

or very nearly half and half.

As to employers and employed (heads of families) we find :—

Employers	89,608	or 1 to 7
Employed	635,883	
Neither employer nor employed ...	201,275	
	926,766	

The proportion one to seven is for heads of families only; it would be considerably higher for the whole population, as most employers are heads of families, while the employed include many single men, besides a whole host of young persons and women. The comparison between those heads of families who are and those who are not employers is, however, good for many purposes.

The average size of family is 4·13 persons, or counting servants 4·33, constituted as follows :—

Heads of Families.		Other Members.						Total.	Average per Family.
		Occupied.		Unoccupied.		Servants.			
926,766	1·0	860,687	0·93	2,060,661	2·20	186,701	0·20	4,034,815	4·33
								Inmates of institutions and their servants..... 167,404	—
								Servants in charge of houses 9,524	—
								Total population..... 4,211,743	—

the figures, but the difference is mainly caused by the fact that the census figures include institutions, hotels, common lodging-houses, and houses in charge of servants. Considering that these did not comprise "family life" in the ordinary sense, I have excluded from my statement of heads of families those who returned themselves as "heads" in such cases, and the whole class is separately grouped.

It may also be noted that the total of persons counted by me as living in "four rooms or under" exceeds in each group that of the census. This is because it was possible, by careful editing, to assign to their proper place a number of persons who it was evident from their surroundings occupied less than five rooms, although they failed to return themselves as so doing.

Of these heads of families 741,000 were males and 185,000 females. The family of which a man is the head is commonly more numerous by one person than that of which a woman is the head. If, following this rough rule, we adjust the figures we shall find that in place of 4·13 all round average (excluding servants) we have for families with a male head about 4·45 and for those with a female head 3·45.

Passing now to the social classification, I am able to sum it up in the following table :—

Classification of the Whole Population of London by Number of Rooms Occupied or of Servants Kept.

I. Without Servants.

Families of	Total Persons.	
Over 10 persons living in 1 room*	267	(Class 1.) 187,921, or 4·4 per cent.
10 persons living in 1 room	280	
9 ,, ,,	684	
8 ,, ,,	1,904	
7 ,, ,,	6,363	
6 ,, ,,	17,218	
5 ,, ,,	37,625	
4 ,, ,,	65,052	
Over 10 ,, 2 rooms	2,567	
10 ,, ,,	5,030	
9 ,, ,,	14,373	
8 ,, ,,	34,040	
Over 11 ,, 3 rooms	2,518	
3 ,, 1 room	88,134	(Class 2.) 304,449, or 7·2 per cent.
7 ,, 2 rooms	63,126	
6 ,, ,,	94,758	
11 ,, 3 rooms	5,335	
10 ,, ,,	14,270	
9 ,, ,,	31,685	
Over 11 ,, 4 rooms	7,141	

* I would warn my readers that there may be some error in the figures where ten or more persons are represented as living in one room. There are doubtless cases of very extreme crowding to be found in London, but there will also be instances of erroneous returns, and I have little doubt that in some cases error in the return will be the true explanation.

Classification of the Whole Population of London—continued.

I. Without Servants—*continued.*

Families of	Total Persons.	
2 persons living in 1 room	112,620	
5 ,, 2 rooms	121,980	
4 ,, ,,	132,612	
8 ,, 3 rooms	57,776	(Class 3.)
7 ,, ,,	85,379	
6 ,, ,,	106,734	781,615,
11 ,, 4 rooms	13,123	or 18·5 per cent.
10 ,, ,,	27,130	
9 ,, ,,	48,861	
8 ,, ,,	75,400	
1 person living in 1 room	58,670	
3 persons living in 2 rooms	123,738	
2 ,, ,,	93,900	
5 ,, 3 rooms	116,285	(Class 4.)
4 ,, ,,	110,804	
3 ,, ,,	88,704	962,780,
7 ,, 4 rooms	93,814	or 23·0 per cent.
6 ,, ,,	102,234	
5 ,, ,,	94,835	
4 ,, ,,	79,796	
1 person living in 2 rooms	15,725	
2 persons living in 3 rooms	54,838	(Class 5.)
1 person living in ,,	5,299	
3 persons living in 4 rooms	51,303	153,471,
2 ,, ,,	24,520	or 3·7 per cent.
1 person living in ,,	1,786	
		(Class 6.)
All families living in more than 4 rooms	—	981,553, or 23·3 per cent.
Total of families without servants	—	3,371,789, or 80·1 per cent.

II. With Servants.

Families of	Total Persons.	
Over 10 persons with 1 servant	14,261	
10 persons with 1 servant	10,990	
9 ,, ,,	16,875	(Class *a*.)
8 ,, ,,	24,952	
7 ,, ,,	33,446	227,832,
6 ,, ,,	40,368	or 5·5 per cent.
5 ,, ,,	44,360	
4 ,, ,,	42,580	

Classification of the Whole Population of London—continued.

II. With Servants—*continued.*

Families of	Total Persons.	
3 persons with 1 servant	34,143	(Class *b.*) 144,115, or 3·4 per cent.
2 ,, ,,	20,528	
1 person with ,,	4,110	
Over 10 persons with 2 servants	7,467	
10 persons with 2 servants	4,600	
9 ,, ,,	6,579	
8 ,, ,,	9,160	
7 ,, ,,	12,166	
6 ,, ,,	14,700	
5 ,, ,,	15,730	
4 ,, ,,	14,932	
3 ,, ,,	12,237	(Class *c.*) 57,750, or 1·3 per cent.
2 ,, ,,	8,302	
1 person with ,,	2,446	
Over 10 persons with 3 servants	3,657	
10 persons with 3 servants	2,030	
9 ,, ,,	2,970	
8 ,, ,,	3,424	
7 ,, ,,	4,375	
6 ,, ,,	5,130	
5 ,, ,,	5,745	
Over 10 persons with 4 servants	2,109	
10 persons with 4 servants	830	
9 ,, ,,	990	
8 ,, ,,	1,496	
7 ,, ,,	2,009	
4 ,, 3 servants	5,751	(Class *d.*) 18,805, or 0·4 per cent.
3 ,, ,,	4,623	
6 ,, 4 servants	2,400	
5 ,, ,,	2,575	
7 or more persons with 5 servants	3,456	
1 ,, 2 persons with 3 servants	3,930	(Class *e.*) 13,358, or 0·3 per cent.
3 ,, 4 ,, 4 ,,	4,382	
5 ,, 6 ,, 5 ,,	2,301	
7 ,, more ,, 6 ,,	2,745	
1 ,, 2 ,, 4 ,,	1,497	(Class *f.*) 7,095, or 0·2 per cent.
3 ,, 4 ,, 5 ,,	2,164	
5 ,, 6 ,, 6 ,,	1,411	
6 ,, 7 ,, 7 ,,	503	
And other large families where the number of servants nearly equals the members of the family	1,520	
1 or 2 persons with 5 servants	741	(Class *g.*) 3,026, or 0·1 per cent.
4 ,, 4 ,, 6 ,,	1,220	
4 ,, 5 ,, 7 ,,	836	
And other families with 8 or more servants where the members of the family equal the number of servants	229	

Classification of the Whole Population of London—continued.

II. With Servants—*continued.*

Families of		Total Persons.
1 or 2 persons with 6 servants	—	(Class *h.*) 4,344, or 0·1 per cent.
1, 2, or 3 ,, 7 ,, ...		
And all families with more than 8 servants where the members of the family are less in number than the servants		
Total of families with servants	—	476,325, or 11·3 per cent.

III. Others.

Servants in families—		
Where there is only 1 servant	64,050	205,858, or 4·9 per cent.
Where there are 2 servants	49,406	
,, 3 ,, ...	27,900	
,, 4 ,, ...	15,820	
Where there are more than 4 servants...	29,525	
Servants in institutions, hotels, &c.	9,633	
Servants in charge of houses.....	9,524	
Inmates of hotels, &c.	25,726	157,771, or 3·7 per cent.
,, common lodging-houses, &c. ...	20,087	
,, large shops, &c.	15,321	
,, institutions.....	96,637	
Total of others	—	363,629, or 8·6 per cent.

Total Population 4,211,743

Summary.

3,371,789,	80·1 per cent.,	without servants.
476,325,	11·3 ,,	with servants.
205,858,	4·9 ,,	servants.
157,771,	3·7 ,,	inmates of institutions, &c.
4,211,743,	100 per cent.	

The foregoing figures may be re-stated shortly as follows :—

Without Servants.								
(1)	(2)	(3)	(4)	(5)	(6)	Servants.	Living in Institutions, &c.	Total.
4 or more Persons per Room.	3—4 Persons per Room.	2—3 Persons per Room.	1—2 Persons per Room.	Less than One Person per Room.	Over Four Rooms.			
187,921 4·4°/o	304,449 7·2°/o	781,615 18·5°/o	962,780 23·0°/o	153,471 3·7°/o	981,553 23·3	205,858 4·9°/o	132,045 3·1°/o	3,709,692 88·1°/o

With Servants.									
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	Living in Hotels, &c.	Total.
1 Servant, 4 or more Persons.	2 Servants, 4 or more, 1—3 or less Persons.	2 Servants, 3 or less Persons, &c.	Servants fewer than those served (other).	Servants about equal in numbers to those Served.	4 Servants for 1 or 2 Persons, &c.	5 Servants for 1 or 2 Persons, &c.	6 Servants for 1 or 2 Persons, &c.		
227,832 5·5°/o	144,115 3·4°/o	57,750 1·3°/o	18,805 0·4°/o	13,358 0·3°/o	7,095 0·2°/o	3,026 0·1°/o	4,344 0·1°/o	25,726 0·6°/o	502,051 11·9°/o
								Grand total	4,211,743

It was with some trepidation that I undertook the comparison of this classification with that obtained from previous investigations. The methods employed were entirely different, and the results of the second inquiry might not be found to support those of the first.

In Vol. II. of this work the population (over estimated at 4,309,000) is divided and described as follows :—

		Per Cent.	Per Cent.
Classes A and B (the very poor)	354,444 or	8·4	(In poverty) 30·7
,, C ,, D (the poor)	938,293 ,,	22·3	
,, E ,, F (comfortable working class, including servants)	2,166,503 ,,	51·5	(In comfort) 69·3
,, G ("lower middle") ...	500,000 ,,	12·0	
,, H ("middle," and "upper classes")	249,930 ,,	5·8	
	4,209,170		100
Inmates of institutions.....	99,830		
	4,309,000	(estimated population—1889)	

We now have—

		Per Cent.	Per Cent.	Per Cent.
(1.) (2.) 3 or more persons per room ...	492,370	or —	12·0	(Crowded) 31·5
(3.) 2 and under 3 ,, ...	781,615	,, 19·0	19·5	
Common lodging-houses, &c.	20,087	,, 0·5		
(4.) 1 and under 2 persons per room ...	962,780	,, 23·4	61·9	(Not crowded) 68·5
(5.) Less than 1 person per room	153,471	,, 3·7		
(6.) Occupying more than 4 rooms ...	981,553	,, 23·9		
(*a.*) 4 or more persons to 1 servant ...	227,832	,, 5·5		
Servants	205,858	,, 5·0		
Persons living in large shops, &c.	15,321	,, 0·4		
(*b.*) to (*h.*) 3 or less persons to 1 servant	248,493	,, 6·0	6·6	
Inmates of hotels and boarding-houses where servants are kept.....	25,726	,, 0·6		
	4,115,106			100
Institutions (excluding inmates of hotels, lodging-houses, large shops, and their servants).....	96,637			
	4,211,743			

In both classifications the servants have been added to the group to which they socially belong, and in both I have excluded altogether the inmates of hospitals, workhouses and prisons, while the inmates of common lodging-houses, of large business establishments, and of hotels are in the second classification, each placed where they socially belong.

It will be seen that the total percentages "crowded" and "not crowded" agree very nearly with the totals of the previous classification "in poverty" and "in comfort." The similarity is even startling, and I hasten to say that no such absolute comparison as these figures might suggest can be made. Living in close quarters is no certain test of poverty, and accordingly while some districts are more crowded than they are poor, others are plainly more poor than they are crowded. It is only when we take the large average provided by the whole area of London, or in districts which represent this average, that we obtain such an agreement as is shown above.

The original classification has the advantage of being directly aimed at poverty, with which domestic crowding is not entirely coincident, but was based on *opinion* only—that is, on the impression made on the minds of the school-board visitors and others by what they had seen or heard as to the position in the scale of comfort of the people amongst whom they lived and worked, whereas the new classification is based on a direct enumeration of the facts.

Some doubt, it is true, is thrown by the Registrar-General on the trustworthiness of the information given in the census as to the numbers of rooms occupied, the numbers of employers and employed, and as to the description by occupation. It is pointed out in the Report (1893) that in spite of the very exact instructions issued, defining the words "house" and "tenement"—the former as the space between the external and party walls of a building, the latter as any house or part of a house separately occupied—confusion seems to have arisen. Further, that the columns used to indicate the status "employer," "employed," or "neither," were frequently not filled in at all, and in other cases contained manifest errors; and finally, that insufficient or misleading returns are often made as to the occupation pursued.

All this is perfectly true. At the same time it must be remembered that nothing can be said of the inaccuracy of the occupation returns that may not with equal or perhaps greater force be urged against the returns of age, and nothing against the information as to industrial status which does not apply equally to civil condition, nor as to rooms occupied which does not apply as much to birth-places. No one of these returns is immaculate. As to age, no doubt *some* figure is filled in, but in how many cases is this done by the enumerator? Or, if filled in by the householder, what guarantee that the ages are known, or, if known, are truthfully recorded? So far from the data being accurate, they bear on their face the stamp of

inaccuracy, as witness the concentration upon even figures, such as thirty-five, forty, &c., and the evident and natural error in the ages returned by young women, who wish only to be "as old as they look," or not quite that. As to civil condition, marriage and widowhood are terms very loosely used, and as to birthplaces, what reliance can be placed on detailed accuracy? Yet these returns are used without cavil for calculations and deductions of the most elaborate character, connected with vital problems and the movements of population.

Primâ facie, the statistics we are using have an advantage over those concerning age and civil condition, in that the information is common property. Age is known at best only to the individual, or, in the case of children, to the parents; the neighbours do not know, the enumerator can only guess. But the number of rooms occupied is well known, and not to be hidden. In nine cases out of ten the enumerator would not need to ask the question if it were his business to fill in the schedule. Nor is the occupation commonly any secret; while as to a man's status of employer or employed, it is decided for all practical purposes by the street in which he lives. It is therefore to be supposed that when the enumerator's work was carefully done, the errors on these points would not be either serious or widespread, and if omissions or blunders have been made, they would be due to the fact that some of the questions were novel.

To meet the difficulty of novelty, and to make sure that the enumerator's work was carefully and intelligently performed, at any rate in London, I obtained the Registrar-General's permission to place myself in communication with the Registrars in each sub-district of the metropolis, and through them with the enumerators themselves. I personally saw all the Registrars more than once, and discussed the subject with them, pointing out the object to be attained, and the important uses that could be made of the material to be collected; and my appeal was very heartily

responded to both by them and by the enumerators. Amongst so many men (there were over three thousand enumerators in all) there could not be uniform excellence, and no doubt some may have performed the work in a perfunctory manner, but, on the whole, I was assured, and feel quite satisfied, that the work was well and conscientiously done. To some extent its quality could be seen when we came to edit the results; and the process of editing served not only as a test, but enabled us also to make current corrections of evident errors or omissions.

On the whole, therefore, I am confident that any errors which may have crept in could not materially affect the general merits of the classification, and that the numbers counted in the census as occupying each tenement, and the number of rooms in each tenement of less than five rooms, may, for all practical purposes, be taken as correct; whilst the value of the return for comparative purposes is strengthened by the fact that the rooms occupied by the poor are usually similar in size.

As to wealth, the new classification has every advantage; indeed, the previous one made no attempt in this direction, but lumped together all the servant-keeping classes, and even some out of the lower middle classes, who, though keeping no servants, live in middle-class streets, and send their children to middle-class schools. The numbers of servants and the numbers in family as given by the census, are undoubtedly correct, and although the number of servants kept is no certain test of wealth, it is at any rate a very fair test of expenditure, and an almost absolute test of the style of life.

The numbers of the "*crowded*" are, as we have seen, very similar to those of the "*poor*" in London, but if all families with three or more persons per room are to be counted as *very crowded*, the number of these considerably exceeds that of the "*very poor*" as previously estimated. In this there is nothing unreasonable. A man and his wife

and one child, or a widow with two children, may occupy only one room; or a family of six or seven may have only two rooms; and yet not be "very poor" in the sense of suffering "chronic want." But when four or more persons live in one room or eight or more in two rooms, there must be great discomfort, and want of sufficient food, clothing, and firing must be a frequent incident. I have, therefore, drawn a line at this point, and find 188,000 people who are undoubtedly very poor.* Further, of the 300,000 who live three or from three to four in a room, it may be that half would be correctly placed in the same category. If so, we have about 340,000 in all of "very poor," amongst the

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* For the reader's convenience I repeat here the figures of the two classifications side by side.

			New Classification.	*Old Classification.*
Lower Classes, 2,257,000	Over 8 to a room	1000		
	8 to a room	2000		
	7 ,,	6000		
	6 to a room, &c.	20,000	Class (1) 188,000	
	5 ,, ,,	57,000		(A & B—354,000)
	4 ,, ,,	102,000		
	3 ,, ,,		Class (2) 304,000	(*divided*)
	2 ,, ,,		Class (3) 782,000	(C & D—938,000)
	Common lodging-houses		20,000	
	1 to a room, &c.		Class (4) 963,000	
Central Classes, 1,584,000	Less than 1 to a room, &c.		Class (5) 153,000	
	More than 4 rooms		Class (6) 982,000	(E & F—2,167,000)
	Over 4 persons with 1 servant		Class (*a*) 228,000	(G—500,000)
	Persons living in large shops, &c.		15,000	
	Servants in families and institutions		206,000	
Upper Classes, 274,000	3 and under 4 persons per servant		97,000	
	2 and under 3 persons per servant, &c.		70,000	
	1 ,, 2 ,, ,,		58,000	(H—250,000)
	Less than 1 person per servant, &c.		23,000	
	Inmates of Hotels, &c.		26,000	
			4,115,000	4,209,000
	Institutions (excluding hotels, large shops, &c.)		97,000	100,000
	Total...		4,212,000	4,309,000

(*See also* detailed figures on pages 6-9.)

crowded, a number which compares closely with the 350,000 of the old classification.

I have not used the expression "*over*crowded," but the subject cannot be shirked, and will be fully considered later, when the position of each district as to poverty, housing, rent, &c., is separately dealt with.

Amongst those who live four or more to a room, there may be some instances in which the room is unusually large, or the family, as in the case of a widow, may consist of only one adult and three small children, but such exceptions will be comparatively rare, and apart from them the whole 100,000 persons can only be described as overcrowded.

Still more certainly must this be true of the 50,000 or 60,000 persons who are living five in one room or nine to ten in two rooms. And beyond these we have no less than 20,000 persons living six in one room or over ten together in two rooms. Into the cases of still greater crowding—the 6000 living seven in one room, or the 2000 living eight in one room—I will not go at present. They will be better considered locally. That such cases exist is known to every relieving officer, and it will be found that many of them are rather aggravated than explained by the character of the "room" occupied. Finally, we have 1000 persons returned as living nine, ten and over ten in a room. These cases, as already stated, are very probably erroneous or misleading in some way. There may be isolated cases of the kind, but the total cannot be regarded as correct.

Of the third section of the lower class, those who live two in one room or four or five in two rooms—or any other combination which yields two and a fraction per room—some may be "very poor," just as, on the other hand, some of the very crowded would not be found to be so very poor, but, on the whole, they will be simply "poor," *i.e.* obtaining with difficulty the bare necessaries of life, but succeeding in obtaining them. Of these, we have in London 780,000, or if we add to them one-half of those who live three, &c.,

to a room, omitted above as not belonging to the very poor, we have 930,000 or 940,000, comparing exactly with the 938,000 "poor" of the old classification.

As to section four of the lower classes it is not possible to make any direct comparison with the old arrangement. There are nearly a million of them (962,780) living one person in each room, or at most three people in two, five in three, or seven in four rooms. They are part of the 2,200,000 "comfortable working classes" recognized in the old figures, and to them must be added three-fourths of the new "central class," of which the remainder compares with the lower middle class (G) in the former classification.

As regards this central class, there is little real difference in condition between the three sections of which it is composed.

Families in which one servant (generally a young girl) waits upon, or helps to serve, four or more persons, are not on any different level socially from families who occupy a whole house and do all the domestic work themselves, with occasional aid from a charwoman or a girl who comes only in the day, going home to sleep. The difference is rather an accident in the constitution of the family, such as the presence of a baby or the absence of grown daughters, than any question of income or class. And amongst the classes who do not keep a servant, there is not much to choose between those who, living in four rooms or less, have fewer individuals in family than the number of rooms occupied, and those who with five rooms or more (*i.e.* a whole house) have an indefinite number of persons. But, on the whole, it is probable that the former will be more uniformly well off than the latter. These, with the families who keep one servant for not less than four persons, and some others, may be taken as representing the lower middle-class contingent, and comparing with the 500,000 of class G.

Finally, we have the 275,000 of the upper classes, of

whom 26,000 are visitors—inmates of hotels, &c.—comparing closely with the roughly estimated 250,000 of class H.

Taking the whole number of these classes we cannot but be struck by its insignificance, being only 6 per cent. of the population, and if we analyse it further this becomes still more marked. Of the 250,000, more than 50,000 live in households with only one servant, fully another 50,000 in families where two servants wait upon six to ten or more persons, and, again, 50,000 in smaller families with only two servants; thus leaving in all less than 100,000 who enjoy such an amount of luxury as is connected with the employment of three or more servants. Of these, again, 20,000 live in largish families with three servants, and 20,000 more in small families with three servants, leaving out of over 4,000,000 only 60,000 persons, all told—men, women and children—who enjoy the luxury of an establishment with at least four servants, and with less than half of these is the number of servants greater than that of those they serve. It must, however, be remembered that only indoor domestic servants are here included, and that coachmen, grooms, and gardeners, being mostly outdoor servants, are omitted, as well as the charwomen, washerwomen, &c.

The plan of recording, in connection with census enumeration, some simple facts by which the position and manner of life of each family could be measured, seems to me to render possible comparisons of great social interest, and to open up a large field of inquiry into the actual structure of society. The facts used here to classify the inhabitants of London could be applied to any city—to Paris or Moscow, New York or Melbourne, Calcutta or Hong Kong; and for the matter of that would have served equally well in ancient Rome or Babylon. Whenever a census can be taken at all, the particulars of rooms occupied by poor families, or of servants employed in rich families,

could be obtained just as easily as the particulars of numbers or sex, and, as we have said, far more easily and more correctly than those of age and conjugal condition.

A "room" is no doubt a vague term, but if not for the whole of the poorer classes in any city, at least for the poor of any selected district, some common type of house is to be found, and an average usual size of room prevails so generally that the accurate description of one or two specimens in any city will speak for all, and by providing a keynote, make trustworthy comparisons practicable.

Similarly, there are servants and servants; many varieties exist in London, and the keeping of servants would provide a very different measure in the extreme examples of New York and Calcutta; but all this could be allowed for or taken into account. It might thus be possible to compare one country or one civilisation with another; as well as trade with trade, district with district, and town with town, in the same country.

It must be said that it is rather to town than country life that the number of rooms occupied can be applied as a test. Even in towns we require the help of a wide average to go safely, for in individual cases a great variety of condition would be found with an equal degree of crowding. But even with the aid of the widest average, country life would to a great extent evade this test, for amongst the poor in country places the condition of the cottage home goes for far more than its size.

If, however, we cannot obtain for agricultural populations any social measure out of the census it is not of so much consequence. It is not in country, but in town, that "terra incognita" needs to be written on our social maps. In the country the machinery of human life is plainly to be seen and easily recognized; personal relations bind the whole together. The equipoise on which existing order rests, whether satisfactory or not, is palpable and evident. It is far otherwise with cities, where as to these questions

we live in darkness, with doubting hearts and ignorant unnecessary fears, or place our trust with rather dangerous confidence in the teachings of empiric economic law.

In trying to find in the census a "common measure" of social condition, my immediate object was the study of the terms on which life is lived in London in connection with various industries and their remuneration. The same classification which has been applied to the whole population, and which can be applied to each district, I now propose to use in order to compare trade with trade. As regards different districts the test of "rooms occupied" is unequal in its application, and rates of rental have to be considered. With trades which are carried on in the inner as well as outer rings of London this difficulty does not exist. But when one employment is concentrated in crowded, high rented neighbourhoods, while another is to be found entirely in the outskirts, some allowance will be necessary on the one hand for the crowded who are not poor, and on the other for those who are poor but not crowded.

The method I shall pursue in dealing with each trade, and the whole population divided by trades, needs some explanation.

In the figures used the whole population is counted twice. First by *individuals*, following the plan adopted in Volume III. of the census, where everyone is enumerated according to the trade or occupation claimed, and the total of the population completed by one large class consisting of those who have no recognized industrial or financial status, being for the most part dependent women and children; Second, by *families* enumerated according to the occupation or status of the head of each family, every member of the household being counted with its head. On the latter plan the inmates of institutions are distinguished, and with them are included all residents in hotels, lodging-houses, &c.—*i.e.* all those who have no place in the family life, from the

terms of which, as to rooms occupied or servants kept, our social classification is obtained.

The trades and occupations of London are grouped and arranged as follows in eighty-nine sections.

1. Architects. 2. Builders. 3. Masons. 4. Bricklayers. 5. Carpenters. 6. Plasterers. 7. Painters. 8. Plumbers. 9. Gasfitters.	Building trades.
10. Cabinet-makers. 11. Carriage builders. 12. Coopers. 13. Shipwrights.	Wood workers.
14. Engine and machine makers. 15. Blacksmiths. 16. Other workers in iron and steel. 17. Workers in other metals.	Metal workers.
18. Gold and silver. 19. Watches and clocks. 20. Surgical and scientific instruments. 21. Musical instruments and toys.	Precious metals, &c.
22. Glass and earthenware. 23. Chemicals. 24. Soap and candles. 25. Leather. 26. Saddlery. 27. Brushes.	Sundry manufactures.

28. Printing. 29. Book-binding. 30. Paper. 31. Stationery. 32. Book-selling.	Printing, &c.
33. Silk. 34. Woollen goods, &c. 35. Dyers and cleaners. 36. Hemp and Fibre. 37. Floorcloth and waterproof.	Textiles, &c.
38. Tailors. 39. Bootmakers. 40. Hatters. 41. Dressmakers. 42. Shirtmakers. 43. Machinists. 44. Trimmings, artificial flowers, umbrellas, &c. 45. Drapers and silk mercers.	Clothing.
46. Millers. 47. Brewers. 48. Tobacconists. 49. Bakers, confectioners. 50. Dairymen. 51. Butchers. 52. Grocers. 53. Publicans. 54. Coffee-house keepers.	Food and drink.
55. Ironmongers. 56. Coal dealers. 57. General shopkeepers. 58. Costermongers.	Other shopkeepers and dealers.
59. Merchants, brokers. 60. Commercial clerks.	Commercial.

61. Cabmen. 62. Carmen. 63. Railway service. 64. Railway labour. 65. Gardeners. 66. Country labour. 67. Seamen, fishermen. 68. Watermen.	Locomotion, &c.
69. Dock and wharf service. 70. Dock labour. 71. Coal porters. 72. Gas-works service. 73. General labourers. 74. Warehousemen, messengers. 75. Factory labourers. 76. Engine drivers, artisans (trade not specified).	Labour.
77. Civil service. 78. Water-works service. 79. Police. 80. Army and Navy.	Public service.
81. Law. 82. Medicine 83. Art and amusement. 84. Literature and science. 85. Education. 86. Religion.	Professional.
87. No occupation.	Pensioners and means.
88. Household service. 89. Outdoor service.	Domestic service.

Under these eighty-nine headings are included every employment recognized by the census. Only the most important occupation in each section is named above, but full details will be found in the various chapters.

The population is completed by an enumeration of the inmates of institutions, &c., as follows :—

(*a.*) Hospitals; (*b.*) Workhouses; (*c.*) Prisons; (*d.*) Barracks; (*e.*) Hotels; (*f.*) Large lodging-houses; (*g.*) Large shops; (*h.*) Ships; (*i.*) Servants in charge of houses (family absent).

The double enumeration by individuals and by families is as follows :—

Sections.	Occupation.	Number of Sections.	A. Registrars' General Enumeration. Individuals.	B. Special Enumeration. Heads of Families	Total Members of Families.
1-9	Building	9	129,432	91,162	432,905
10-13	Wood-work	4	68,080	40,168	188,537
14-17	Metals	4	65,210	39,758	187,571
18-21	Precious Metals	4	31,589	16,890	77,548
22-27	Sundry Manufactures	6	38,159	18,727	87,652
28-32	Printing	5	87,283	33,154	148,856
33-37	Textiles	5	15,872	6,546	28,815
38-45	Clothing	8	260,018	82,647	323,006
46-54	Food and Drink	9	138,434	75,949	376,697
55-58	Other Shopkpers.	4	42,829	22,046	100,442
59-60	Commercial	2	128,415	54,015	253,523
61-68	Locomotion, &c.	8	154,249	93,316	423,494
69-76	Labour	8	197,316	94,333	425,328
77-80	Public Service ...	4	60,247	19,631	139,646
81-86	Professional.....	6	105,977	52,655	187,149
87	Pensioners and Means.....	1	133,578	126,877	455,063
88-89	Domestic service	2	399,178	58,892	198,583
(*a*) to (*h*) (*i*)	Institutions*	—	—	—	167,404
	Servants in charge of houses	—	—	—	9,524
	Unoccupied (10 yrs. and over), including students :—				
	Males	216,093	1,200,095	—	—
	Females	984,002			
	Children under 10			—	—
	Males	475,204	955,782		
	Females	480,578		—	—
			4,211,743	926,766	4,211,743

The head of the family is common to both systems of enumeration, but this cannot be said with certainty of any other member. The father may be a cabinet-maker, his daughter, living at home, may work at an umbrella factory, and his son at a printer's, while his wife and younger children are unoccupied. The family will then be divided

* In the census, all inmates of institutions who claimed an occupation are, if less than sixty years of age, returned under that occupation; those over sixty are included with the "unoccupied."

according to system A amongst Sections 10, 44, 28, and "unoccupied," while, according to system B, all will appear under Section 10.

When considering the conditions under which employment is obtained, we have to follow Enumeration A, but when dealing with the circumstances under which people live, it is rather B that we must go by. In some trades the proportion of heads of families is so great as to make it comparatively easy to bring the two methods into one focus. In other trades, where a large proportion of the workers are young, or of the female sex, this will hardly be possible at all.

To help to bring the two together, we may perhaps assume that when any trade employs young people or women, it will draw first on its own children and relations. If these are more than sufficient, we may, without making any serious error, suppose that the occupation is not largely recruited from other sources; we may also assume that, when their own people are less than sufficient, the trade will draw on them so far as they go. We then have a surplus of young people or females in certain quarters to supply those whom we find required by other trades, and to some extent we may be able to assort the one to the other, considering social or other probabilities.

The Registrar-General's enumeration includes age and sex as well as occupation. In my own enumeration, these particulars are lost, but as I deal with complete families and large averages, it is not impossible to estimate with sufficient accuracy the respective proportions.

On the other hand, my enumeration, besides the test of condition found in "rooms occupied" or "servants kept," states whether the heads of family are or are not natives of London, and by giving the district lived in localises each trade. I am also able to carry the division of employer and employed somewhat further than is attempted in the census.

A short tabular statement at the beginning of each section gives, for the "persons represented" in it, the

main numerical facts, and more details are given in appendices.

The geographical distribution of those included in each section is given by the census in four groups, and according to the enumeration by families, in six groups. The composition of these, and their separation into inner and outer London, by registration districts, is as follows :—

	Inner.		Outer.	
East ...	Shoreditch Bethnal Green Whitechapel St. George's East Stepney Mile End		Poplar.	
North...	St. Mary Christchurch All Souls' Rectory Cavendish Square	Sub-districts of Marylebone	St. John, Marylebone. Hampstead. Regent's Park Kentish Town	Sub-districts of St. Pancras.
	Tottenham Court Gray's Inn Lane Somers Town Camden Town	Sub-districts of St. Pancras	Islington. Hackney.	
West ...	St. George's, Hanover Square		Paddington Kensington Fulham Chelsea	Taken together in the census.
Central	Westminster St. Giles' Strand Holborn London City			
South-East	St. Olave, Southwark		Camberwell Greenwich Woolwich Lewisham	Taken together in the census.
South-West	St. Saviour, Southwark Waterloo Road Lambeth Church	Sub-districts of Lambeth	Kennington Brixton Norwood Wandsworth	Sub-districts of Lambeth.

Total Population.

	No.	Per cent.
Inner London	1,589,110	38
Outer London	2,622,633	62

In addition to these statistics I have collected information as to the conditions of employment in each section. The method adopted has been varied, according to the character

of the employment, but everywhere we have tried to obtain information from all sides. Employers, trades union officials, and individual workmen, have all been applied to, and I trust that the description of the working of each trade and of the wages earned will be found to be fairly accurate and sufficient for the purpose in view.

As regards employers in each trade, the plan adopted has been to approach as many as possible by circular asking from each an exact account of those employed, whether men, women, or boys, and the wages paid to each in an average, or, better still, in a maximum and minimum week. This appeal brought in every case a fair proportion of replies, and the tabulated results may be accepted as showing the earnings ordinarily made in the best class of firms. Those firms who were willing to give us further assistance were then personally waited upon and consulted as to other points of interest; for instance, as to usual hours and overtime; regularity and irregularity; seasons; methods of training, &c. Nothing could exceed the kindness with which our troublesome quest has in most cases been met. Factories have been opened to us, wages books have been shown, and particular and elaborate returns have been specially prepared for us setting forth in the most accurate way the hours worked as well as the pay received in busy and slack weeks, and the exact terms of piece and time employment. My gratitude for all this kindness may be best shown by making as good a use as possible of the mass of material thus placed at my disposal.

Nor have the trades union officials been less ready in helping me to understand the relative positions of employer and employed in the trades with which they are connected.

For each section of industry I have endeavoured to ascertain the extent to which the workpeople are organized for trade purposes. Particulars of every Trade Union or Society of importance have been obtained. It is, however, possible that some small Society has, here and there, been

omitted, owing either to the difficulty of tracing it, or to information being refused. But such cases are exceptional, and the results obtained are quite sufficiently reliable for any general comparative purpose.

The evidence of individual workers, I fear, falls short of what might be desired. It is not always easy to obtain; but when available adds much to the life of the picture.

In addition to our own information—collected mostly in 1893—I have been very kindly allowed to use the wages returns for many London trades collected by the Statistical Department of the Board of Trade in 1886-7, but not published, because it concerned trades which were not of sufficient general importance. I have set my figures and those of the Board of Trade side by side for comparison. They are, however, not quite comparable; first, because wages have risen since 1886, and second, because the plan adopted by the Board of Trade differed somewhat from that which was adopted by me. The queries of the Board of Trade asked for the maximum and minimum numbers employed in any weeks in 1885, with the total amount paid for the same weeks, and also the numbers employed in the first week of October, 1886, with full particulars of character of employment, standard hours worked, and wages for an *ordinary full week's work.* We could not venture to ask so much, and contented ourselves with the *actual wages earned* in an ordinary week (or in a busy and slack week of which we ourselves took the average). Our figures are therefore actual, and include overtime or short time, whereas the figures of the Board of Trade are for a full week's work, taking no account of time lost or extra time made. The comparison of the double returns is nevertheless valuable, as widening to a considerable extent the base on which our conclusions stand.

The names of those who have assisted me in describing the trades of London will be found in the table of contents for each volume.

PART I.—THE BUILDING TRADES.

THE BUILDING TRADES.

CHAPTER I.

THE WHOLE GROUP.

Of those engaged in building—architects, builders, masons, bricklayers, carpenters, and the rest—the census counts 129,432, divided as to age and sex as under :—

Persons represented: (A) Census Enumeration.

Enumerated by Age and Sex.

	10—	15—	20—	25—	55—	65—	Total.
Males	766	8968	13,647	89,168	11,660	4597	128,806
Females	13	120	103	300	58	32	626
Total.....	779	9088	13,750	89,468	11,718	4629	129,432

There are practically no women employed in these trades, and the proportion of boys is not large. Of the whole 130,000, no less than 103,000 are men between 20 and 55 years of age, and 91,000 are counted as heads of families, an extraordinarily large proportion. The whole population included in these families is 432,905, or, excluding the

servants, $4\frac{2}{3}$ persons on the average to each family, as shown in the following table, which divides the trade into nine sections :—

Persons represented : (B) Enumerated by Families.

No.	Sections.	Heads.	Total number (excluding servants).	Per family (excluding servants).	Servants.
	Architects & Engineers...	3,680	15,785	4·29	3461
2	Builders*.....	6,871	34,303	4·99	1510
3	Masons	4,750	22,890	4·82	106
4	Bricklayers.....	14,330	67,611	4·71	85
5	Carpenters & Joiners.....	24,805	114,953	4·63	568
6	Plasterers & Paperhangers	5,111	24,942	4·88	46
7	Painters & Glaziers	22,982	105,517	4·59	439
8	Plumbers	5,141	24,056	4·67	142
9	Locksmiths & Gasfitters	3,492	16,378	4·70	113
	Total.....	91,162	426,435	4·67	6470
	Servants.....		6,470		
	Total population		432,905		

The social condition of this large portion of the population is shown in the table which follows :—

* This is a very ambiguous heading in the schedules of the census (*vide* page 49), including most of the employers, but also many labourers, handy men, and others. The ambiguity of this term, and the omission of many of the builders' labourers, must be borne in mind in the consideration of all these preliminary general tables.

Lower Class.	4 or more persons to a room	25,763	5·9 %	15·4 %	Crowded: 39·2 %
	3 and under 4 ,, ,,	41,237	9·5 %		
	2 and under 3 ,, ,,	102,944		23·8 %	
	1 and under 2 ,, ,,	109,679		25·4 %	Not Crowded: 60·8 %
Central Class.	Less than 1 ,, ,,	13,793	3·2 %	31·8 %	
	More than 4 rooms	111,154	25·7 %		
	4 or more persons to 1 servant	12,682	2·9 %		
Upper Class.	Less than 4 persons to 1 servant and 4 or more to 2 servants	5,933		1·4 %	
	All others with 2 or more servants	3,250		·7 %	
	Servants	6,470		1·5 %	
		432,905		100 %	

Out of the 432,905 persons concerned 6470 are domestic servants. The number of those served is 21,865, while 404,570 employ no hired domestic service, unless it be that of a woman or girl who comes occasionally for the day.

More than half of those who employ resident domestic servants at all, live in households where one general servant waits upon four or more persons, and this servant will usually be a young girl. One-fourth, again, are members of families of one to three persons with one servant, or four or more persons with two servants. So that, finally, out of the whole 426,435 individuals, only 3250 are enjoying that degree of luxury which may be indicated by the keeping of two servants for a small family, or of more than that number for any size of family.

Of the 404,570 who keep no servants, we find that 125,000 are the members of families occupying more than four rooms or (if occupying less than four rooms) members of small families whose numbers are less than the number of rooms they occupy. Next, there are 110,000 living one or up to two persons per room; then 103,000 living two or up to three persons per room; 41,000 living three or up to four persons per room; and, finally, 26,000 living four or more persons to a room.

Taken section by section we obtain the following table:—

Social Condition (by Sections).

	3, 4, or more persons to a room.	2 and under 3 persons to a room.	1 to 2 persons to a room.	Less than 1 to a room, more than 4 rooms, or 4 or more persons to 1 servant.	Less than 4 persons to 1 servant.	Servants.	Total.
Architects, Civil Engineers, &c.	249	526	1453	8092	5465	3461	19,246
Per cent. ...	1	3	7½	42½	28	18	100
Builders*.....	2955	3900	4718	20,621	2109	1510	35,813
Per cent. ...	8	11	13	58	6	4	100
Masons.....	4130	6383	5847	6404	126	106	22,996
Per cent. ...	18	28	25	28	½	½	100
Bricklayers.....	16,057	20,264	17,164	14,038	88	85	67,696
Per cent. ...	24	30	25	21	—	—	100
Carpenters and Joiners.....	11,202	25,151	35,308	42,698	594	568	115,521
Per cent. ...	10	21	30	37	1	1	100
Plasterers and Paperhangers	5316	7367	6322	5891	46	46	24,988
Per cent. ...	21	30	25	24	—	—	100
Painters and Glaziers	22,044	29,672	27,360	25,934	507	439	105,956
Per cent. ...	21	28	26	24	½	½	100
Plumbers.....	2895	5309	6852	8883	117	142	24,198
Per cent. ...	12	22	29	36	½	½	100
Locksmiths.....	2152	4372	4655	5068	131	113	16,491
Per cent. ...	13½	26½	28	31	½	⅛	100

* *Vide* note, page 32.

Or arranged in order of the degree of crowding :—

	Employers and Employed.	Employed only.*
	Crowded.	Crowded.
Bricklayers	54 per cent.	55 per cent.
Plasterers, &c.	51 ,,	53 ,,
Painters	49 ,,	53 ,,
Masons	46 ,,	49 ,,
Locksmiths	40 ,,	43 ,,
Plumbers	34 ,,	39 ,,
Carpenters	31 ,,	33 ,,
Builders†	19 ,,	33 ,,
Architects	4 ,,	6 ,,

The number included in each section, decade by decade, since 1861, shows a considerable growth in the trade, which, however, culminated in 1881 as regards operatives, excepting painters and plumbers.

Census Enumeration, 1861 *to* 1891, *for each Section :*

	1861.	1871.	1881.	1891.
Architects, Engineers	3,900	5,700	5,800	6,000
Builders	3,800	5,700	7,300	8,900
Masons	4,600	6,200	7,800	6,500
Bricklayers	17,000	18,600	23,600	19,400
Carpenters	27,600	31,700	39,700	34,500
Plasterers, Paperhangers	6,500	8,800	8,500	6,900
Painters and Glaziers	21,000	27,800	28,200	32,700
Plumbers			7,300	9,300
Locksmiths and Gasfitters	2,900	4,000	5,300	5,300
Total	87,300	108,500	133,500	129,500

The decrease between 1881 and 1891 is, no doubt, due to the fact that, as regards building, London has outgrown the limits recognized by the Registrar-General. The trade has continually moved outwards, and this centrifugal action has now carried many of those engaged in it beyond the census boundaries.

For each separate section, in uniformity with the plan adopted throughout this volume, a statement is introduced,

* It has been assumed that the employers are those, in each section, who live in the best style.

† *Vide* note, page 32.

showing the number of employers and employed, both for heads of families and for the whole of the occupied. It must, however, be remembered that all the branches of the building trades are closely inter-connected, and that those returned as builders (Section 2) themselves employ many of the employers of the other sections. Conclusions, therefore, as to the actual proportion of employers to employed, drawn from any of the individual sections would be misleading. For this purpose the trades need to be taken as a whole, and this is done in the following table, which excludes architects and engineers as being on a different footing from the rest:—

Status as to Employment.

Occupation.	Heads of Families.				Whole of Occupied.							
					Employers.		Employed.			Neither.		
	Employers.	Employed.	Neither.	Total.	Males.	Females.	Males under 20.	Males over 20.	Females all ages.	Males.	Females.	Total.
Builders*	2,994	3,458	419	6,871	3349	28	587	4,386	12	502	2	8,866
Masons.....	285	4,249	216	4,750	297	5	394	5,490	19	286	1	6,492
Bricklayers ...	279	13,677	374	14,330	261	—	975	17,748	16	427	—	19,427
Carpenters,&c.	1,133	22,030	1,642	24,805	1178	24	2,459	28,587	232	1998	16	34,494
Plasterers, &c.	211	4,405	495	5,111	236	3	459	5,563	20	607	3	6,891
Painters, &c...	1,549	19,427	2,006	22,982	1625	22	1,947	26,434	120	2499	19	32,666
Plumbers.....	644	3,862	635	5,141	712	8	1,963	5,878	14	769	2	9,346
Locksmiths....	286	2,766	440	3,492	318	5	638	3,787	41	521	2	5,312
Total.....	7,381	73,874	6,227	87,482	7976	95	9,422	97,873	474	7609	45	123,494
					8,071		107,769			7,654		

It appears that the proportion of employers to employed is, on the whole, one to thirteen, but even this figure is not quite accurate, for, on the one hand, a considerable number of bricklayers, carpenters and painters are to be found working under masters in other trades, and on the other, many of those who return themselves as "general labourers" should rightly have been described as "builders' labourers."

* *Vide* note, page 32.

Taking the figures as they stand, there are rather over 8000 employers in these trades and 108,000 employed, while 7700 more are returned as working on their own account.

On the bald facts thus indicated light will be thrown by a study of the present condition of the London building trade and the terms of employment in it. In the course of this study the tabulated figures will be again and again drawn upon in dealing separately with each section.

The building trades of London supply the most conspicuous example of a great industry carried on in almost complete dependence on a local demand. London boots, London clothes, London furniture, and many other commodities produced in this great centre of trade, are consumed elsewhere—in the provinces, in the colonies, or in foreign countries—quite as much as, or more than, in London. But the products of the builder's art, things of brick and mortar—shops, houses, churches, factories, and public buildings—are fixtures. They are erected to serve the needs of London, and are of no value for any other purpose. Capital and labour may move, but the buildings they have created must stand where they are placed till the hour of destruction arrives, and, under the hand of the "house-breaker," roof and walls and floors collapse into dusty heaps of comparatively worthless old material.

The fixity of the article produced is one of the essential and peculiar features of the trade; but, if incapable of extension by export, it is also free in a hardly less remarkable way from the competition of outside products. Joinery for a London building may, it is true, have been made at some quiet country town, or amongst the fiords of Norway; stone may have been cut to the required shapes at the quarries, and marble may have been not only quarried, but polished in Scotland or Italy. But these are exceptions, and even a largely increased use of specially prepared materials, such as iron columns and girders, would trench

comparatively little on the labour which must necessarily be expended on the spot.

It results, then, that in London, through the concentration there of public authorities and private boards, with ever-increasing and varying demands; through the constant increase of its huge population, and the renewals and repairs of existing property, there is always so much work to be done that the building trades form its most important industrial group.

In exchange for the work done away from London in the preparation of materials, whether by steam or water-power or by cheaper labour, the professional skill of London is largely appealed to from outside. The London architect, or engineer, or master builder, may design, advise and specify, or even contract for work that is to be executed in the provinces, the colonies, or in foreign countries. From London firms clerks, foremen, and leading hands may be sent to all parts of the world to act as officers to local battalions. This tendency is common to most of our trades, and is not more noticeable in the building trades than in many others. The exchange of service involves in every case some loss to the unskilled and low paid English workman. The trained artisans above them alone reap the advantage, except so far as money earned by one class slowly filters back to the mass of the people by a process economically and ultimately satisfactory, but affording poor consolation to those who are meanwhile bereft of their accustomed employment.

A special form of interference to which the building trade is subject—that resulting from regulations of Local Boards, Bye-laws of Municipalities, and Acts of Parliament—may be noticed here. This interference is justifiable both on æsthetic and sanitary grounds. It is rendered necessary by the nature of the product which, created by successive generations, forms the framework of our cities, determining the measure of their beauty and con-

venience, and affecting materially the health of their inhabitants.

In few instances is the complexity of modern industrial relations more completely illustrated than in the operations of these trades. A building, though it be only a cottage dwelling, demands the co-operation of many classes of workers. The duties of superintendence, therefore, are always complicated, and the opportunities for sub-contract are numerous. The great and rapidly increasing variety of specialities in the trade, many of them based on patent rights, further tends to complicate every transaction, and to cause the original contract between the client who demands, and the builder who supplies, to cover a large and increasing number of subsidiary bargains.

It is, however, as an organic whole that it may be well first to regard the building trade group. We can thus free our minds from all thought of complex motives and interests, conflicting or otherwise, actuating individuals or groups of individuals, and consider the trade rather as an organism existing to produce certain commodities. The various individual trades regarded from this point of view will derive importance solely from the relation in which they stand to each other, and from the part they play in bringing about the desired economic end. Considering the building trades, therefore, from this standpoint, and disregarding for the moment such questions as the functions of the sub-contractor, combinations between masters or men, rates of wages or the length of the working day, we find a combined trade made up of the following more essential divisions:—Architect, quantity surveyor, contracting builder, clerk of the works and foreman, with all the army of operatives: bricklayers, masons, carpenters and joiners, slaters, smiths and fitters, plasterers, paperhangers, plumbers, glaziers, painters, and builders' labourers.

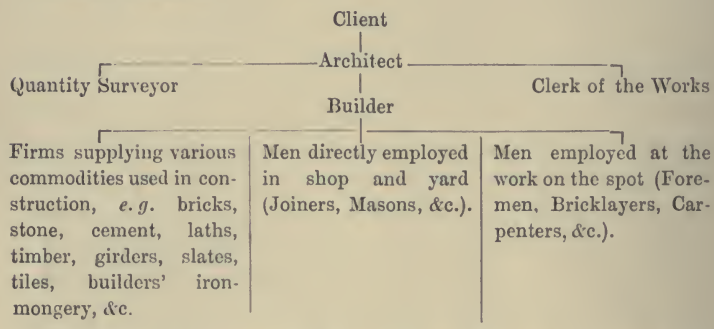
This list would be too long for a small provincial town, but

is by no means exhaustive for London, where a great concentration of demand differentiates many additional branches of the trade into well-defined departments, in which workers either possess highly specialized skill or, as the victims of an excessive division of labour, do work with the least possible exercise of personal skill or individuality. In the village and the small provincial town every builder's operative tends to be an all-round man. There the bricklayer, for instance, can and does turn his hand with equal readiness to stone-work, tiling, plastering, and painting. The local demand, however, does not give sufficient scope for the development of special skill, and thus, while general knowledge is often great, first-class workmen are rarely found. It is just the reverse in London, which is unrivalled as a finishing school, but a bad training ground, from the ease with which men, to suit their employers' convenience and their own, are led to confine themselves to one narrow groove of work.

Thus, specialization of skill is characteristic of London, and pointers (of brick-work), gauge workers (where arches and cornices are concerned), staircase hands, lathers, fibrous plaster workers and zinc workers may be mentioned as instances illustrating this economic tendency. There are, besides, large numbers of specialists whose labour is entirely employed on processes and products, patented or otherwise, that exist, often under conditions of monopoly or quasi-monopoly, in London more than in any other city.

An analogous tendency towards specialization may be traced among the members of the higher branches of the trade, determined, sometimes by particular aptitudes, at others by deliberate and persistent intention; sometimes primarily by the amount of capital at command, at others by a traditional connection, or by the presence or absence of this or that quality making them strong or weak competitors.

Before proceeding to deal in detail with the various divisions of the trade, the description of a simple case of contract may help to make the whole subject more intelligible. In ordinary building operations of the better class, where an architect is employed, the relations of client, architect and builder to each other, as well as to other classes of workers engaged, may be illustrated by the following diagram:—



The above represents a simple case when the contractor or builder employs directly all who carry out the work, and when there is no sub-contracting in any form. It will be seen later how many devious methods of contract are sometimes found under the apparent simplicity of the normal case.

The client in our table is of course the person requiring the building. The architect, whose designs have been approved, will prepare what are called the small scale contract plans, with necessary detail drawings and specification. These pass to the "quantity surveyor," whose business it is to work out from the drawings the quantity of material required and the amount of labour the use of this material, and the design, involves. These "quantities," sometimes covering many scores of folio pages, are lithographed, and copies are sent to the builders who are invited to tender. They also furnish a basis for a "protecting estimate," which the architect will probably work out for his own guidance in considering the tenders sent in.

Assuming that some tender is considered satisfactory, and accepted, the architect drafts the contract agreement, using, as a rule, the form of general conditions agreed to between the Royal Institute of British Architects and the Builders' Society, and adopted by the Central Association of Master Builders of London.

Contracts are materially affected by the working rules which have been agreed to by the Master Builders' Association and the Building Trades' Federation; for these rules determine, for all builders in the Association, the hours of work, rates of pay, and rules for overtime. The present overtime regulations, especially, have greatly modified the time clauses of contracts, penalising such as would necessitate working days of abnormal length, or night shifts, even to the extent of abolishing them, save in very exceptional cases. These rules and their results will be referred to again in dealing with the labour organizations of this group of trades.

To return, however, to our imaginary contract. If the work to be done is of some magnitude, or at a distance, the architect will employ a clerk of the works to act as his representative, while the foreman of the job will act as the representative of the contractor.

The labour engaged may be divided (again ignoring sub-contracts) into three main classes, as stated in the diagram—(1) the men employed by the firms which supply materials needed; (2) those employed by the contractor on his own premises; and (3) those actually working on the building.

With the first class we shall not be much concerned. In it would be included brickmakers and tilemakers, stone and slate quarriers, the preparers of cement and lime, the renders of laths, the manufacturers of glass and paint, of iron girders and castings and smiths' work, of all kinds of sanitary fittings, heating and lighting apparatus, and the thousand and one special appliances, patented or

otherwise, whose description is to be found in perplexing fulness in such publications as the "Architect's Compendium" and the "Builder's Price Books." To a great extent the industrial processes involved are carried on in the provinces, or if falling under the head of London trades, are mostly to be found in one or other of the sections treated in subsequent chapters of this volume. The exceptions to this rule will be dealt with later on as subsidiary fields of employment in the building trade group.

Assuming still that the contractor is carrying out all the possible branches of the work through his own men, we come to those engaged in his own shops and yards. Here, in the joiners' shops, the wood-work will be prepared according to the plans—window-frames and casements, doors and door-frames, skirting, panelling, &c.—ready to be fixed in position when the structure is far enough advanced. In the stoneyard the stone will be cut to size and shape, and in the smiths' shop iron-work will be prepared; and all this work may be in hand weeks and even months ahead, while the "job" is in its quite early stages. On the works, assuming that the site is clear and does not require the services of the "house-breaker" to pull down and clear away some old structure, the excavator (a labourer) is quickly followed by timber-men and scaffolders, and they in turn by bricklayers and masons, and very shortly after them the carpenters, who do "carcase" work, will begin operations. As some branches begin first, so they also leave off first, and to some extent an order of succession can be traced, but for most of the branches, and for most of the time, the work is really simultaneous. It will thus be more useful to consider the separate sections in connection with their whole sphere of work than in connection with the order in which they may be employed in carrying out any individual contracts.

We may, therefore, now leave our imaginary case and proceed to the general description of the various sections

of the trade. In what follows we shall endeavour to state (1) the functions of each section, and (2) the sub-divisions into which, from one economic cause or another, the branches tend to fall. Later chapters will be devoted to the consideration of such special subjects as trade organization, apprenticeship and training, hours, wages and average earnings, piece-work and sub-contracting, irregularity of work, alternative employments, and the overlapping of different trades. In connection with these questions, causes leading to displacement of labour, such as competition, provincial and foreign, the introduction of new processes and the use of machinery, will be considered; and all those difficulties which supply, here as elsewhere, "a seamy side" to industrial occupation.

The account of each section is preceded by a summary enumeration of the "persons represented," with such facts as are given by the Census of 1891. In supplementing this information the following methods have been adopted:—

(1) Interviews with members of all the more important divisions.

(2) Returns from employers of wages paid in busy and slack weeks, and for continuous periods.

(3) Accounts obtained from individual workmen of their own earnings for extended periods.

In addition, much information has been obtained from the Reports of the Labour Commission and from the circulars and reports of Trade Societies and other publications.

CHAPTER II.

THE DIFFERENT SECTIONS.

ARCHITECTS, CIVIL ENGINEERS, &c. (*Section* 1.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. *—19	Males. *20—54	Males. *55—	Total.
(1) Architect ..	12	154	1607	251	2024
(2) Civil Engineer	—	94	1823	412	2329
(3) Surveyor	—	61	1017	193	1271
(4) Rd.& Railway Contractor, Surveyor or Inspector ..	—	13	266	35	314
TOTAL	12	322	4713	891	5938

The number in these professions reaches its maximum at 25 to 35 years of age, and there is an unusually large proportion of men over 65. (*See* diagram.)

Distribution.

E.	N.	W. & C.	S.	Total.
160	1598	1836	2344	5938

Details of Occupations (from the Census Dictionary).

(2) Architectural, consulting, hydraulic, sanitary, mining, and submarine engineer.
(3) District surveyor, insurance surveyor, examiner of buildings, land measurer, quantity surveyor, wood surveyor.
(4) Railway stores contractor, railway signal, switch, and turntable maker; point and crossing-fitter.

Enumerated by Families.

Sex	Males		3673	Heads of Families, 3680.
	Females		7	
Birthplace	In London	40 %	1466	
	Out of London(*a*)	60 %	2214	
Industrial Status .. (*See* note.)	Employer	30 %	1088	
	Employed	49 %	1814	
	Neither	21 %	778	

(*a*) The large proportion born out of London is noticeable.

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	3680	3064	9041	3461	19,246
Average in family ..	1·0	83	2·46	·94	5·23

Classification.

Numbers living in families.		%
3 or more to a room	249	1·3
2 & under 3 ,,	526	2·7
1 & under 2 ,,	1453	7·6
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	8092	42·0
Less than 4 to 1 servant, and 4 or more to 2 servants	2916	15·2
All others with 2 or more servants ..	2549	13·2
Servants	3461	18·0
	19,246	100

	Inner.	Outer.	Together.
Crowded..	12 %	3 %	4 %
Not ,, ..	88 %	97 %	96 %

Distribution.

East ..	Inner 207	Outer 228	43[illegible]
North	Inner 814	Outer 4126	49[illegible]
West ..	Inner 607	Outer 4025	463[illegible]
Central	Inner 649		64[illegible]
South-East	Inner 122	Outer 3427	354[illegible]
South-West	Inner 452	Outer 4589	504[illegible]
			19,24[illegible]

Inner 2851, or 15 %
Outer 16,395, or 85 %

NOTE.—*Industrial Status.*

In the sections which follow a Table is given showing "Status as to Employment." In this group, however, so few were returned either as "employer" or "employed," that the statement according to census enumeration is omitted as being misleading. But in the Enumeration by Families it was possible, by careful examination of the returns, and dealing only with heads of families, to allocate those returned to the class to which they probably belonged.

* The interpretation of the age symbols used in this and succeeding tables, is as under :—
"—19" indicates persons under 20 years of age.
"20—54" ,, ,, aged 20 to 54 years inclusive.
"55—" ,, ,, aged 55 years and upwards.

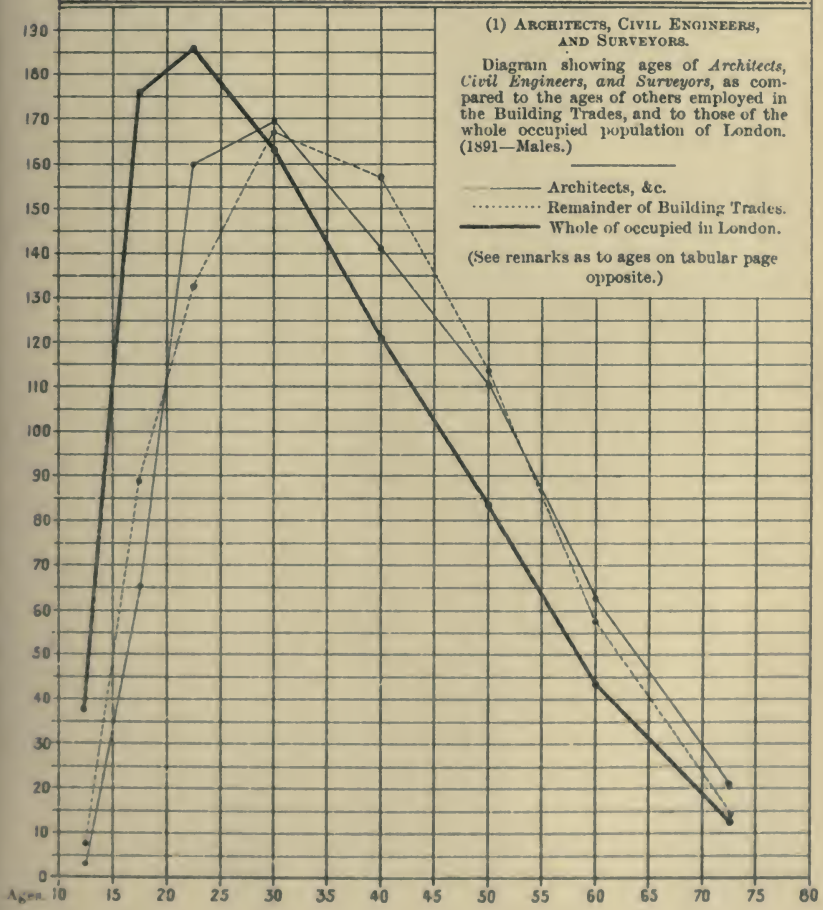
EXPLANATORY NOTE

Of Method adopted in preparing the Diagrams of Numbers of occupied Males at Different Ages.

Of every 10,000 males in London, 6300 are counted as *occupied*. These 6300 males are divided by ages in the following manner :—

Ages.	Proportion per 10,000 of total aged 10-80.	Proportion at each year of age.
10 and under 15	193·5	38·7
15 ,, 20	880·0	176·0
20 ,, 25	933·0	186·6
25 ,, 35	1636·0	163·6
35 ,, 45	1201·0	120·1
45 ,, 55	830·0	83·0
55 ,, 65	434·0	43·4
65 ,, 80	192·5	12·8
	6300·0	

The last column, giving the yearly mean, is obtained by dividing the proportionate figures by the number of years which they cover. Thus the proportionate figures for ages 10-15, as representing 5 years, are divided by 5, giving 38·7 as the mean; similarly, for 25-35, covering 10 years, the figures are divided by 10, giving 163·6 as the mean number. The numbers at the different age-periods in each Trade-section or Group are brought to the same scale, and the charts drawn in accordance with the mean figures, as is shown by the indicating points of the curves being placed in the centre of each age-period.



(1) Architects, Civil Engineers, and Surveyors.

Diagram showing ages of *Architects, Civil Engineers, and Surveyors,* as compared to the ages of others employed in the Building Trades, and to those of the whole occupied population of London. (1891—Males.)

——— Architects, &c.
····· Remainder of Building Trades.
━━━ Whole of occupied in London.

(See remarks as to ages on tabular page opposite.)

Architects, Engineers, &c.

These professions are characterized by a good deal of specialization. Among engineers we find *civil* engineers, *mining* engineers, *marine* engineers, *railway* engineers, *electrical* engineers, and *hydraulic* engineers. There is also the "contractor's engineer" who advises contractors, and carries out for them engineering work that has been designed by others.

Among architects and among builders we find the same tendency towards specialization, and those with a reputation for theatres, for churches, for municipal buildings, town halls or libraries, for banks or city offices, may be mentioned as instances.

While the builder carries out plans, drawn by the architect in accordance with his own artistic sense and in obedience to established rules of construction; the architect turns to the engineer when the structure demands a special knowledge of applied science dealing with stresses and strains, and the strength of materials. Of the elements of this science the architect must have a general knowledge and must use them in every design; but the engineer must make their varying applications his special study. The architect can proceed by simple rules and accepted formulæ, while the engineer must be able to elaborate these and make fresh use of the scientific truths that underlie, though in varying degrees of complexity, all building operations alike. If the engineer have a touch of the artist by so much will he be the greater engineer, for the sense of proportion will act as a guarantee against waste of power; but the architect is in the first place an artist, responsible for beauty, for unity of conception and completeness of design, as the engineer is primarily responsible for strength and economy in the use of materials. It is, therefore, to the architect that the community will

chiefly look to save it from the spurious and the debased, from misplaced ornament and tasteless decoration, from forms that have lost their original meaning, and which now, it may be as sham pillars or false arches which support nothing, only serve to hide the true structure; while it is the influence of the engineer that will open the door to the use of new methods of construction, often including the use of new materials, which art must ultimately adopt.

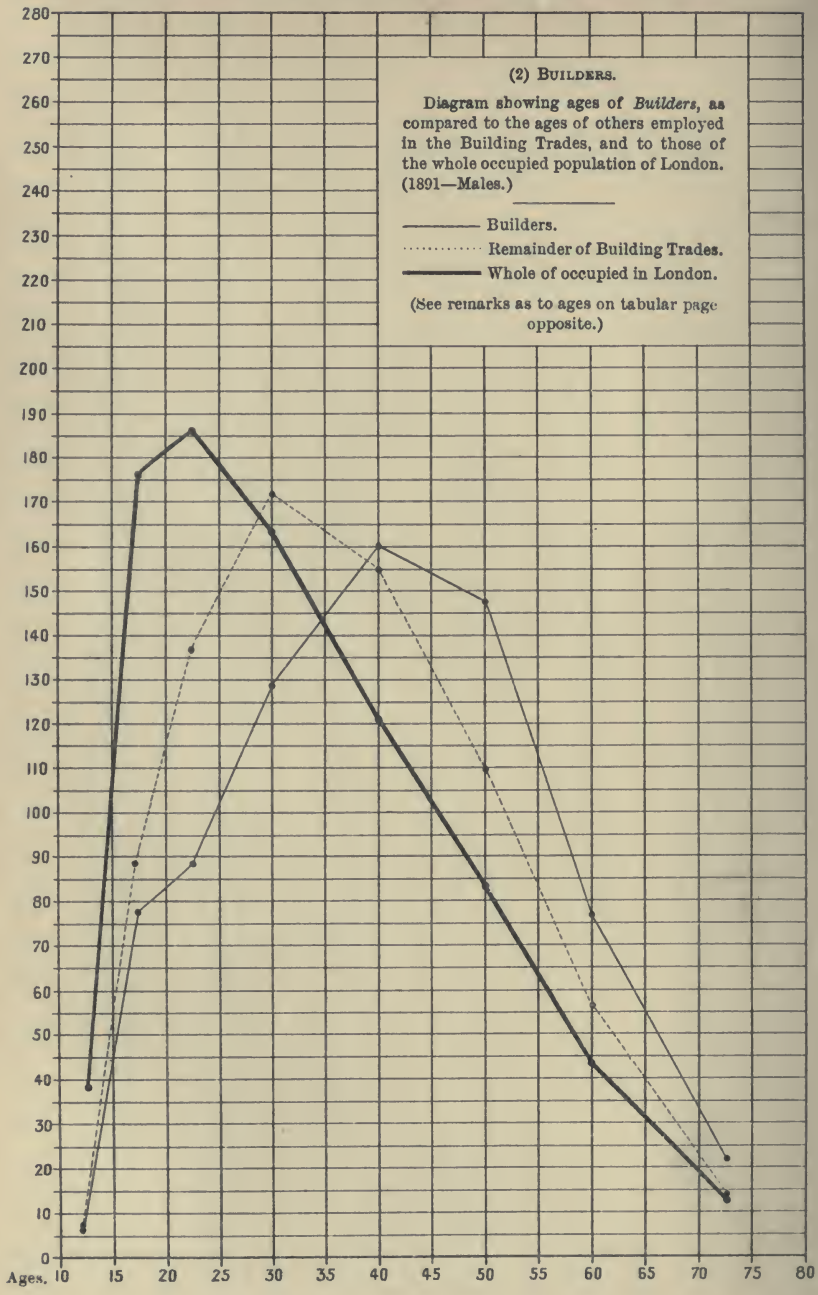
The present is a transition stage. The economic advantages of metal in construction are being forced upon the attention of architects and builders alike, but the former have not yet learnt to make it serve artistic ends.

In some special cases, such as the building of a railway station, the engineer is in sole charge, and a large amount of building in dwelling houses is carried out by the builder without the intervention of either architect or engineer. Yet in this case the architect exerts a dominating influence because his designs are adopted or copied, and used again and again. In most other cases the architect, besides furnishing the drawings, exercises an active supervision over the execution of the work.

The only class of surveyor that has a direct connection with the building trades—other than that of the district surveyors, who exercise official supervision and enforce building regulations—is that of the quantity surveyor.* Many so-called surveyors are valuers and agents, facilitating exchange rather than production, and have no place in the necessary organization of the group under consideration.

* Cf. page 42.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



BUILDERS. (*Section* 2.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
Builders and Builders' Labrs.*	42	587	6713	1524	8866

The high average age (*see* diagram opposite) owing to the presence of many small masters and jobbers, "handy men" whose experience, character, and connections bring them their living.

* *Vide* note, p. 32.

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
723	2491	2161	3479	8866

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

Dock, conservatory, or summer-house builder; public works, drainage, general repair, contractor; furnace, oven, retort-maker; scaffolder; pile-driver, house-breaker, roper; steeple-jack; chimney repairer; water-mill labourer; clerk and inspector of works; builders' labourer.

Enumerated by Families.

Sex	Males		6851	Heads of Families, 6871.
	Females		20	
Birthplace	In London	44 %	3024	
	Out of London	56 %	3847	
Industrial Status	Employer	43 %	2994	
	Employed	50 %	3458	
	Neither	7 %	419	

We may here again, as with architects, note the large proportion born out of London. Journeymen come to London in the active years of life and stay on, becoming jobbing builders as they grow older.

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied	Servants.	Total.
Total	6871	7821	19,611	1510	35,813
Average in family ..	1	1·14	2·85	·22	5·21

CLASSIFICATION.

Numbers living in families.		%
3 or more to a room	2955	8·2
2 & under 3 ,,	3900	10·9
1 & under 2 ,,	4718	13·2
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	20,621	57·6
Less than 4 to 1 servant and 4 or more to 2 servants	1657	4·6
All others with 2 or more servants ..	452	1·3
Servants	1510	4·2
	35,813	100

	Inner.	Outer.	Together.
Crowded..	35 %	14 %	19 %
Not	65 %	86 %	81 %

DISTRIBUTION.

East ..	Inner	2010	2713
	Outer	703	
North	Inner	1917	9771
	Outer	7854	
West ..	Inner	948	7333
	Outer	6385	
Central	Inner	1440	1440
South-East	Inner	619	5841
	Outer	5222	
South-West	Inner	1815	8715
	Outer	6900	
			35,813

Inner 8749, or 24 %
Outer 27,064, or 76 %

Status as to Employment (according to the Census Enumeration).

Census Division (1891).	Employers. Males	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males	Neither Employer nor Employed. Females	Total.
Builder	3349	28	587	4386	12	502	2	8866
TOTAL	3377		4985			504		

This is the employers' section of the building trades generally, and it is therefore not surprising to find so large a proportion of employers. In this, and some other respects, the different sections should be considered together as one industry.

Builders.

Builders are not the only employing class in the group, but they are by far the most important. They may be roughly grouped as follows :

1. *The "high-price" builders,* who do the best work, and the best work only, and who rarely, or in some cases never, submit tenders for open competition. The price at which they offer to do work is an estimate as distinguished from a tender, but will be subject to the same analysis as though several tenders had been sent in. Numerically this class is small. Its members are firms of old and high standing. Very little of their work is put out, and their stocks, especially of seasoned timber, are always large in proportion to the extent of their business. These latter characteristics will be true also of the best firms in the three following classes.

2. *Builders and contractors,* who tender for new work, in open competition with each other, according to the custom of the trade. This class includes the great proportion of both large and medium-sized London builders. It embraces firms of the highest reputation and also those whose unscrupulousness is notorious. The selection of the firms who are invited to tender, in the absence of special instructions from the client, is in the hands of the architect.

3. *Jobbing builders,* whose main business is that of repairs, renewals, enlargements, and general decorative work, as opposed to first construction. With these the system of tender is often resorted to, and is the rule in expensive jobs. This class includes many firms of considerable size, and also a very large number who have neither the staff nor the capital, nor the experience, to enable them to undertake more than the ordinary small jobbing work of their own immediate neighbourhood.

4. *Speculative builders.*—This again is a very composite class. The work done is chiefly new work, and, as its name implies, is executed largely in anticipation of

demand. The speculative builder is naturally most common in those parts of London which are now being laid out for building for the first time, or in which, as for instance in Chelsea in recent years, a large scheme of rebuilding is being carried out. The speculative builder is associated in the public mind with the "jerry builder," but the association is often misleading. For on the one hand many ordinary contractors are themselves "jerry builders" of the worst type, and more would like to be, while on the other hand many speculative builders do excellent work. Many of the best and most fashionable parts of London have been opened up by him, and he is not infrequently a man who has the boldness to carry out great schemes and the integrity to do good work. Uniformity of style and a resulting architectural dulness is the charge to be laid at his door, rather than inferior workmanship or the use of bad materials. But it must be admitted that the worst work of all is done by members of this very mixed class. Speculative building in the outer circle of London, especially in most of the poorest districts, has become a byword and a reproach to the whole building fraternity. It probably sinks to its lowest level in many of the cottage estates intended for the homes of those who are now enabled by increased facilities of transport to live further than was possible in former times from the pressure and confinement of the more central parts of London.

But even of such work two points must be remembered. First: that bad work is soonest renewed. The rapid mechanical extension of the area of a great city will inevitably be uninteresting; and it is some compensation if houses which are neither beautiful nor wholesome have a short life. It would be disastrous indeed were it not so. Within fifty years the curtain may rise on a change of scene and the transition be the easier because many of the houses are "jerry built." Secondly: responsibility must be put on the right shoulders; many speculative builders who

do the worst work are simply men of straw, the puppets of the real capitalist; who may be the ground landlord, the building company, or, to quote the glossary of the Labour Commission, the "money-lending solicitor." The builder may be an unscrupulous tool, but blame, when blame is due, rests mostly on those who employ this tool to serve their own ends. Finally, even such accommodation as these houses give is usually an improvement upon the one or two close rooms nearer the heart of the City, which have been left. Better Walthamstow than Whitechapel, and better Willesden Green than Holborn.

The function of the builder differs widely from that of the manufacturer or factor, whose first duty is to make a market for his wares. The builder waits on a demand that he has little or no power to create. Other trades and other interests determine the growth of London. He may to some extent exercise a directing influence, but his first task is to carry out instructions and to control labour. In the latter duty is found the distinguishing feature of the builder's economic position, and in it centres our main interest in the part he plays in the organization of this group of trades.

The building contractor on a large scale has a staff comprising a manager with general powers, estimating and "prime cost" clerks and draughtsmen, and various foremen of departments; besides, in some cases, a "walking foreman," and, invariably, a "general" foreman for each job. The big contractor thus rules largely through lieutenants, entrusting them with certain powers and making them responsible for results. It is to the general foreman, for instance, that the contractor looks for the proper execution of the work, and not to the actual workmen. In large firms the "walking foreman" is often one of the chief subordinates. No single piece of work is entrusted to his care, but he holds a roving commission to visit the points where contracts are in

course of execution for his firm. The extent and method of devolution varies, but the fact remains the same, and the secret of successful management lies largely in choosing the right men for the subordinate offices, and then in trusting them. No matter with what variation in detail, the method of management adopted must include—(1) careful clerical work, including the preparation of estimates; (2) efficient support for the foremen from headquarters, so that, for instance, they are not kept waiting for materials needed in construction; and (3) the selection of good general foremen. On these three points success greatly depends.

The important part played by subordinates in this group of trades, though founded on a wide experience and seemingly quite inevitable, has its bad side. It secures more efficient control, but masters and men remain personally unknown to each other. One builder states that "the employer never speaks to a man by way of instruction or complaint; he deals always with the foreman"; and the consequence is that, "in many large businesses the men hardly know the members of the firm," and thus it is regretfully admitted that "generally in this trade the old friendly relations between masters and men have passed away." The shifting character of so much of the employment, and the system of payment by the hour, tend to accentuate this state of things. Ignorance of one another is, doubtless, often the cause of misunderstanding and dispute.

Employers are found in most of the minor sections of the group, but are of secondary importance. Master masons, master plasterers and master sawyers are usually employed by the builders. Then there are firms of painters and decorators, plumbers, smiths, and gasfitters, who work either for builders or direct for the general public. Master carpenters and master bricklayers are in most cases small jobbing men, but the enumeration will include others who

work for builders as sub-contractors. The employer, as sub-contractor, will demand fuller discussion later, when some attempt must be made to distinguish the real significance in these trades of that much-abused class.

Clerks of the Works.

It may be doubtful under what heading in the census a clerk of the works would actually be returned. He is, as has been seen, the representative of the architect, acting in the interests of the client, and is stationed on the building during construction.* It is his business to watch the quality of the materials and the character of the workmanship, and to see that in every respect the terms of the contract are complied with. He and the foreman, who represents the builder, usually settle matters between themselves, only referring to their employers if necessity arises. Such are the duties of the clerk of the works, and in fulfilling them men vary in degree of rectitude and punctiliousness, from the man who "ruins" some builders by his stern exactions—and who has to be reckoned with by all—to the weak or dishonest vessel, who lets the treating of the foreman, or the *backsheesh* of the contractor, blind him to the demerits of soft stone and unseasoned timber, or to hasty and incompetent workmanship.

They are for the most part "practical" men, though it is not unusual for one whose training has been in builders' or architects' offices as draughtsman or estimating clerk to become a clerk of the works. Young architects, too, may take up these duties for the sake of experience, and the presence of a clerk of the works who obtains his appointment through personal influence, and not from the possession of the requisite knowledge and training, is not unknown.

* The name is used, also, to designate men appointed as permanent officers in large finished and occupied buildings—banks, theatres, &c.—to supervise water, gas, heating, electric lighting, and general repairs.

Those who have had an artisan's training have usually worked as carpenters and joiners, but operative bricklayers and masons are also sometimes chosen. The salary paid varies from £3 or £4 up to £10 a week for very exceptional men. The responsibilities are great, and the temptation to swerve is strongest when the need for vigilance is greatest. When employers are honourable, foremen conscientious, and workmen competent, the functions of the clerk of the works become consultative rather than detective in character.

Builders' Foremen.

As already indicated, there are various kinds of foremen —the "walking foreman," the shop foreman (mason, joiner, or machinist) and the general foreman of the job. The last mentioned is the most representative, and his duties are the most significant. These duties include the very important task of engaging the men required.* The foreman has not only to find men, but to find the right men, and not only to find but to keep them. The best foreman is not only efficient himself, but also one for whom the best men are willing to work. In dealing with the men, the foreman takes the place of the employer. He keeps a list of men on whom he can rely, and from amongst whom he obtains the nucleus of his staff as he moves from job to job. In some cases he will write to those he needs, but as a rule this is unnecessary, the men knowing almost as well as he does himself what new work is offering. The rest of his men, the rank and file employed, are usually taken from those who "call round" in search of a job. No character is asked for or offered, and the

* Except in some special branches, which are attended to direct from headquarters by means of the more permanent staff, or in branches such as excavating, special tiling, stone-work or erecting iron-work, which may be executed by other employers, be they co- or sub-contractors. In some cases also, the leading hand of a department is allowed to take on.

stranger who is put on is judged solely by his merits or demerits as a master or bungler at his craft. Many of them may be known, if not to the foreman, to some of his leading hands, but the system of chance employment is widespread in the trade. It should be added that the foreman will also have his list (whether in writing or not) of those whom, from one cause or another, he is unwilling to employ.

The "setting out," *i.e.* measuring out the work according to the plans, is also part of the foreman's duty, and the apportionment of the labour to the work. It is always good management to see that men at the same branch work so far as possible together, with at least one known and steady hand amongst them. This practice, when carried to an extreme, means the introduction of the "bell horse," *i.e.* of the man who is paid an extra ½*d* or 1*d* per hour to set the pace. But when fairly followed it merely means that the chances open to the shirker of wasting his time are diminished, since he will soon be detected and if need be discharged. It is found by experience that several men working together will, as a rule, do more than the same number working separately, and the task of supervision is greatly lessened.

Other duties devolving on the foreman are (1) to requisition materials as required, (2) to keep an account of all materials used, and (3) to prepare the wages' sheet according to the time kept by the men. He has often a timekeeper, who assists him in this part of the work.

In small jobs it may be his business to pay the men, but in larger contracts this would as a rule be done by a pay-clerk sent down from headquarters. The wages' sheet is prepared and sent in on Friday, and the men are paid on the Saturday, money earned on Saturday being kept in hand. In case of discharge before the end of the week the foreman may, according to the custom of his firm, either pay the man direct, or give him an order on the

office for his money, walking time in this case being allowed. Out-of-pocket expenses are met by the foreman and collected by him from the firm.

In large contracts the foreman of the job has leading hands, who act as sub-foremen in their own branches, with their own measure of responsibility.

The great majority of these foremen have been trained, generally in the country, as carpenters and joiners. The only other branches that seem to produce general foremen are the bricklayers and masons, and these, though tending to increase in number, form as yet but a small minority —not one in five—of the class.

Builders' Labourers.

In the census enumeration, many of these labourers are returned in this section with the builders, but they will also be to some extent scattered through the other branches of the building trades, as well as included in the wider term "general labourer." But the builders' labourers none the less form a distinct and important class in the group.

The popular idea of the builders' labourer is probably that of the man who serves the bricklayer, and keeps him supplied with bricks and mortar. But this idea, while always misleading, is yearly becoming less and less adequate. The extended use of machinery, although it has displaced some of the labourers, has probably to a still larger extent changed the character of their work, and the extended use of iron and steel in construction is having the same effect. Scaffolding and strutting the sides of deep foundations are among the other branches of work that fall to the labourer, and often call for a degree of resourcefulness and energy and knack sufficient to place the man possessing them almost, if not quite, on the level of the skilled artisan. Many of the labourers, therefore, have their

own independent spheres of work, and the section is thus by no means composed exclusively of those who serve the artisans.

Not a few of those who follow up the special branches of labourer's work—the scaffolding, hoisting, and timber-work—keep to them exclusively, and there is a considerable class of men who, if work in their own special branches be not obtainable, will neither seek for, nor accept, general labourer's work. There is also, it would seem, a certain attractiveness in the work of scaffolding and hoisting, that, apart from the slightly higher rate of pay it secures, draws many men to it who could, had they been so minded, have qualified as artisans. In one case the evidence tells of a man who "could have been an artisan, but preferred the labourer's work because of its greater variety." And, again, of a young mason who gave up stone-cutting because he did not take to it, and who is now, from choice, a scaffolder. Scaffolders, hoisters and timber-men, form for the most part a single class, but a completer sub-division is not unknown as regards the first branch, a considerable body of men adhering solely to it, and moving about from job to job undertaking nothing but scaffolding work. The knack of these men consists largely in having learnt the art of manipulating rope and of tying secure knots. Many of them have been to sea.

The high scaffolding put up for the cranes, so conspicuous and now so common a feature in buildings in progress in London, is erected by scaffolders, often taken on especially for this work by a sub-contractor.*

The labourer, as "hoister," has the task of lifting heavy material to the level at which it will be used by the artisan. When a crane is at work the crane-man in charge

* In this case the task of construction is regarded as finished when the first load has been hoisted by the crane. This is taken as a test that all is secure, and the responsibility of the sub-contractor ends until the time comes for him to return and take down the temporary wooden structure.

works largely under the direction of the leading hoister, the chief exception being in the case of stone, when the mason who is responsible for the fixing will superintend the moving into position. Much of the heaviest material to be hoisted is composed of metal girders and joists, and to move the largest of these, even if they are to be used at ground level, requires considerable judgment and care. By the help of the crane, often supplemented for final adjustment by the crowbar, it is the duty of the hoister to place the girders, joists and columns where they are required. There his duty ends, the fixing being done by the rivetter or fitter, if there be rivetting to do, and by the bricklayer for the final building into the main fabric of these metal adjuncts to the modern structure.

In the absence of a steam-crane or hoist, or when it is so placed that it cannot do the work, the hoister has often to arrange a temporary scaffolding, and, by his own adjustment of pulleys, to do the work of lifting.

As timber-men, the builders' labourers put in the vertical supports, and the horizontal beams wedged in between, to keep up the sides of deep foundations. The work may involve some very rough carpentering, and is often attended by risk.

Another class of labourers whose work is often specialized, is that of the "house-breakers," employed in the demolition of old buildings. They are largely interchangeable with the scaffolders, but rarely undertake general labourers' work. They command somewhat extra pay for the additional risks incurred.

The foregoing classes of labourers as a rule specialize, when they do so at all, because of some particular preference or aptitude. The excavating labourers—those who dig foundations, and do general navvying work on buildings—often do that work only because they can do none better, and include as a class the less responsible men. The navvy of splendid physique, frequently seen on railway workings, is

rarely found doing simple excavating work on buildings, and the fact that the latter is time-work, while the former is often piece-work, probably affords the chief reason for this. Great muscular force is worth little more to its owner than the strength of the average man in digging and in the preparation for a London building, and this work is thus left almost entirely to the man of average or even less than average physical capacity. The same class of men break up and mix the concrete used for foundations, &c., and do the filling in. They also interchange to a considerable extent with ordinary labourers, acting as assistants or servers to the artisan.

The builder's labourer can no longer be considered either the unrecognized outsider, or the recruit seeking to be admitted into the ranks of the skilled artisan. His position, being more exactly determined, is rapidly securing for him a well-defined sphere of work, a result largely due to the formation and activity of the labourers' trade unions and to their affiliation with the Building Trades' Federation. He may thus be counted as a permanent auxiliary force in the group, but, apart from the spheres of work already enumerated, it is not easy to describe his duties. For almost every class of artisan needs his particular assistant, and the duties of the latter will necessarily vary with the functions of the former. Thus the principal work of the bricklayer's labourer will be that of mixing the mortar and of serving the bricklayer with it and with the bricks he requires; of the mason's labourer, to assist in the hauling, to rub the stone after it has been worked with the chisel, to clean the stone down after the fixing, and generally to wait on and assist the fixer; of the plasterer's labourer, to mix the greater part of the materials required, to run the lime through the sieve, to serve the plasterer with the material he requires, to help in fixing his scaffolding, and generally to wait upon him. In heavy carpentering work, where much lifting and moving

of timber is required, there is room for labourer's work, and often, one labourer and two carpenters will be able to do as much work as three of the latter. In painting, the chief work of the labourer seems to be to clean the surfaces in the case of old work, to move ladders and generally to wait on the painter. He is sometimes allowed to execute the rougher part of the work.*

There seems to be little specialization in the various branches of auxiliary work. That which exists is entirely voluntary, so far as trades union regulations are concerned. It often happens, it is true, that men do follow up some particular branch, especially as plasterers' or masons' labourers, but if their usual employment did not offer they could and would at once try for work in some other section. In the sense in which skilled trades are divided up, leading to a compulsory following up of the branch chosen, there is no corresponding division whatever in the ranks of the labourer.

Differentiation of the labourer's and the artisan's work is, however, sharply defined. There are rigid rules in several of the trades emphasizing this. The use of the tools, for instance, of the skilled man by the labourer is frequently forbidden. In the provinces, and in much of the suburban work in London, this division is, however, less absolutely maintained, and it is here that the labourer is trained to become a handy man or is gradually qualified to claim work, probably in another locality, as a fully trained artisan.

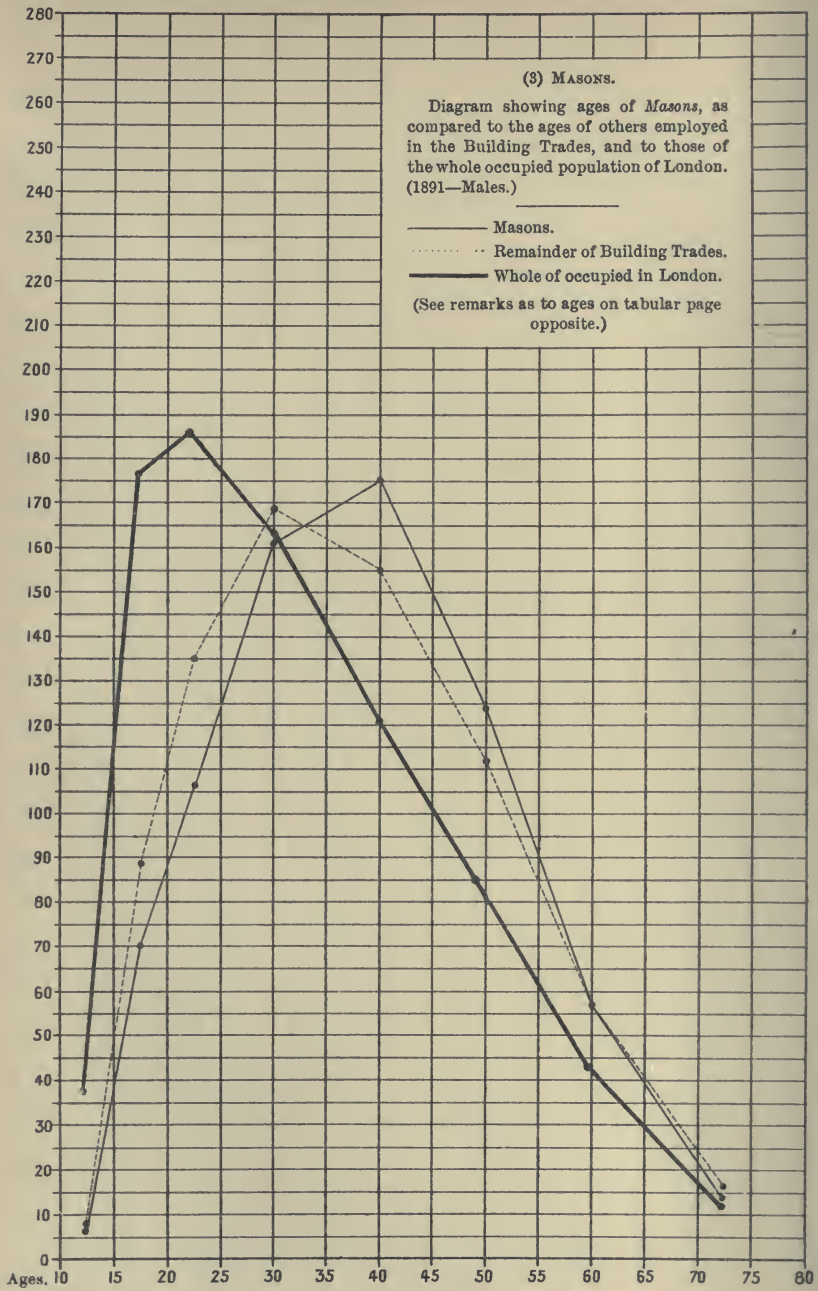
The case of the plumber's mate seems to differ somewhat from that of the other auxiliaries. The mate in this trade stands in the same position as the labourer of the other

* It is often stated that the skilled painter disorganizes his own trade by his unwillingness to do the commoner work. And there is doubtless much truth in this charge, although the prejudice seems to be becoming less common. Even though the painter be willing, however, to do the inferior work, he will not always be able to secure it, for the inferior man who can do it will also be willing to take inferior pay.

sections, but it seems to be admitted that if he is employed at all, he must find some of his work in the use of the plumber's tools for subordinate purposes, and thus be in training to do plumbers' work. This is a bitter source of complaint with many plumbers, but others admit that "a smart mate cannot help the plumber without picking up a great deal of the trade, and if by this means he becomes thoroughly efficient, the plumbers have no right to keep him from getting the full rate of wage"; and further that "if the mates merely fetched and carried or stood and watched, it would not pay the employer to engage them, and boys would be put on instead." The recent formation of the Plumbers' Mates' Trade Society and its admission to the Building Trades' Federation will probably tend to keep the mates as a separate class; but it is to be noted that many of them have served their apprenticeship in the provinces, and are in training to become fully-equipped artisans.

The proportion of labourers to artisans employed will vary, not only from trade to trade, but also within the trade, according to the character of the work on hand. The rougher and heavier the work is, the more material will have to be handled, and the greater will be the demand for the labourer's help. It is customary for each mason fixer to have a labourer attached to him, but in brick-work the proportion will rarely be so high as this, and will vary greatly. Thus a bricklayer doing fine "gauged" work will be served with much less labour than one who is doing straightforward work, especially for instance in building foundations, where there is much filling in, both of mortar and bricks, that can be rapidly executed. So also with the plasterers. In coarse work one labourer is often needed for every two skilled men, while if the plasterers be running cornices or angles a single labourer will suffice for six skilled men.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



MASONS. (*Section* 3.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Mason	25	350	4805	734	5914
(2) Slater & Tiler	—	44	473	61	578
TOTAL....	25	394	5278	795	6492

There is in these trades much less than the average proportion of young men; the maximum number is reached between 35 and 45, but after this the decline is rapid. The peculiarities of the age line shown on the diagram probably indicate a marked influx from the provinces.

Enumerated by Families.

Sex	Males		4738	Heads of Families, 4750.
	Females.....		12	
Birthplace	In London	46%	2208	
	Out of London..	54%	2542	
Industrial Status ..	Employer	6%	285	
	Employed.....	89%	4249	
	Neither	5%	216	

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	4750	4638	13,502	106	22,996
Average in family..	1	·98	2·84	·02	4·84

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
778	1214	1665	2835	6492

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	4130	17·9
2 & under 3 ,,	6383	27·8
1 & under 2 ,,	5847	25·4
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	6404	27·9
Less than 4 to 1 servant, and 4 or more to 2 servants	91	·4
All others with 2 or more servants ..	35	·1
Servants	106	·5
	22,996	100

	Inner.	Outer.	Together.
Crowded..	60 %	39 %	46 %
Not	40 %	61 %	54 %

DISTRIBUTION.

East ..	Inner 2051 / Outer 566	2617
North	Inner 827 / Outer 3381	4208
West ..	Inner 929 / Outer 4012	4941
Central	Inner 785	785
South-East	Inner 347 / Outer 2918	3265
South-West	Inner 2647 / Outer 4533	7180
		22,996

Inner 7586, or 33 %
Outer 15,410, or 67 %

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Gravestone-maker. Curb-maker. Stone-carver, marble sawyer, worker, engraver, polisher, mason's labourer.

(2) Blue slater, grey slater.

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Mason	269	5	350	5036	19	234	1	5914
(2) Slater, Tiler	28	—	44	454	—	52	—	578
	297	5	394	5490	19	286	1	6492
TOTAL.....	302		5903			287		

Masons.

The mason's duties are divisible into (1) working the stone, that is, preparing it for use in actual construction, and (2) fixing it when worked. The working or shaping varies according to the drawings, and includes many forms, from rectangular to circular; many varieties of surface, smooth or rough, plain, fluted, moulded, or panelled; and every degree of ornamentation. It is this preparation of the material that separates mason's work from that of the bricklayer, whose main business it is to set a finished product with the shaping of which he has had no concern.

The tools of a mason are a hammer and chisel, with the addition of a saw and a drag for soft stone, and a small trowel for fixing. They are much the same all the world over, and so they have been time out of mind. The shaping of the stone may be done either in the stone-yard of the builder or master mason, or *in situ*, or at the quarries. Machinery is now extensively used for planing, and, except in very hard stone, for moulding. In fixing heavy blocks of stone, the mason is responsible for the hoisting, in which his own labourer and the crane-men, or men specially engaged for hoisting, will assist. But the responsibility for dealing with the stone and for setting it in exact position, rests solely on the mason in charge, and by him the actual cementing is done.

There are certain divisions in the trade, or branches of work closely allied, connected with the special materials used, which may be enumerated.

(1) *Stone-carvers.*—Although some masons do this work, they are best regarded as a separate class. As a rule, they

are more highly paid than the general masons, though there are some carvers who earn less than the regulation 9½*d* per hour. Payment in this branch is according to merit, the figure carvers obtaining the highest rates.

(2) *Granite masons,* who have special skill in working this hard and difficult stone, and who consequently are able to command somewhat higher wages than general masons. Of these there are few in London.

(3) *Marble masons.*—Many of these are general stone-masons, who only happen to be working at marble. Marble is comparatively an easy material to manipulate. Those who are unable to work other stone are less skilled than the general mason, and often earn somewhat lower wages. They are, moreover, not eligible for admission to the Operative Masons' Society.

(4) *Marble polishers* require little skill, and are quite distinct from operative masons.

(5) *Slate masons* work slate for mantle-pieces, tanks, cisterns, &c. Any trained mason can do such work.

(6) *Slate enamellers* have even less to do with mason's work than marble polishers. A certain number of girls are employed at this work.

(7) *Hearthstone* and *grindstone makers* and *monumental masons.*—These are truly masons, though working in special branches differentiated by the product, and not by degree of skill or amount of remuneration. Grindstones are chiefly made at the quarries in Derbyshire and Yorkshire.

All these appear in the census under the heading "masons."

Slaters and Tilers.

The slaters must be distinguished from the slate masons, the work of the former being that of roof-slating and

closely allied with that of the tilers. Slaters and tilers are, in fact, often interchangeable, although there is a tendency towards specialization in one branch or the other. This specialization is, however, largely determined, not by special aptitude of the individual workman or by any inherent difference in the character of the work, but rather by the chances of employment, and since most roofing in London is of slate, a larger number of men keep exclusively to this branch than to the other. The degree of specialization that does exist is thus largely determined by the conditions of the market, but also to some extent, here as elsewhere, by the fact that there is scope in each branch for the acquirement of special skill. Since, however, most employers undertake both branches of the work, it is the "double branch" man who has the better chance of continuous employment. The amount of tiling in London had been steadily increasing, until the last two or three years, but recently has been checked considerably by the claims of the bricklayers to do this work, and the consequent disputes.

The work of the slater consists of cutting, or trimming, the slates, and of punching them—that is, of making the holes for the nails by which the slates are secured to the wooden battens. For this work, a small hand-machine is in use by some firms. It is also the business of the slaters, in addition to actually fixing the slates, to "set out" the battens, but not, as is generally the case in the country, to fix them. In London this is generally done by carpenters.

In covering in, the slater begins from the eaves, and works up to the ridge. The ridge itself will also be finished by the slater unless it be of lead or zinc, neither tiler nor bricklayer being in any case called in, even if the finish be a line of ornamental tiling. The battens are generally used as a scaffolding, a "duck-ladder"—that is, a board with battens nailed across, generally knocked up

by a carpenter for temporary use on the job—being fixed for the top work. If, however, any separate scaffolding be used, it is also the business of the slater to make and to remove such from the eaves upwards to the ridge, the scaffolder being only responsible for scaffolding up to the required vertical height. By this arrangement the risk of breaking the roofing, by the clambering over it of an independent body of scaffolders, is avoided.

Roof-tiling, though differing from the slating in methods of fixing and in the bedding employed, is very similar to it in its general character. In the case of pattern work, cutting the tiles becomes an important additional part of the work. Much of it can be done by the trowel, but the rough edges have often to be clipped with a pair of pliers and the whole becomes frequently a lengthy and tedious process. Tiling is also claimed by the bricklayers.

Inside tiling is a quite separate branch of work. It falls for the most part to the plasterers and to specialists, the proportion of the work executed by the latter tending steadily to increase.

BRICKLAYERS. (*Section* 4.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females	Males.			Total.
	All Ages.	–19	20–54	55–	
Bricklayer	16	965	16,056	2390	19,427

The diagram shows maximum numbers at the most active time of life. London employers have the pick of the trade.

Enumerated by Families.

Sex	Males		14,325	Heads of Families, 14,330.
	Females		5	
Birthplace	In London	49 %	7129	
	Out of London..	51 %	7201	
Industrial Status ..	Employer	2 %	279	
	Employed.....	95 %	13,677	
	Neither	3 %	374	

Total Population concerned.

	Heads of Families.	Others Occupied	Unoccupied.	Servants.	Total.
Total	14,330	13,024	40,257	85	67,696
Average in family..	1	·91	2·80	—	4·71

Distribution.

E.	N.	W. & C.	S.	Total.
2562	4613	4193	8059	19,427

Classification.

Numbers living in Families.		%
3 or more to a room	16,057	23·7
2 & under 3 ,,	20.264	30·0
1 & under 2 ,,	17,164	25·4
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	14,038	20·7
Less than 4 to 1 servant, and 4 or more to 2 servants	79	·1
All others with 2 or more servants ..	9	—
Servants	85	0·1
	67,696	100

	Inner.	Outer.	Together.
Crowded..	66 %	48 %	54 %
Not ,, ..	34 %	52 %	46 %

Distribution.

East ..	Inner 6540	Outer 2433	8973
North	Inner 2810	Outer 12958	15,768
West..	Inner 1028	Outer 10129	11,157
Central	Inner 2702		2702
South-East	Inner 1977	Outer 10754	12,731
South-West	Inner 5643	Outer 10722	16,365
			67,696

Inner 20,700, or 31 %
Outer 46,996, or 69 %

Details of Occupations (from the Census Dictionary).

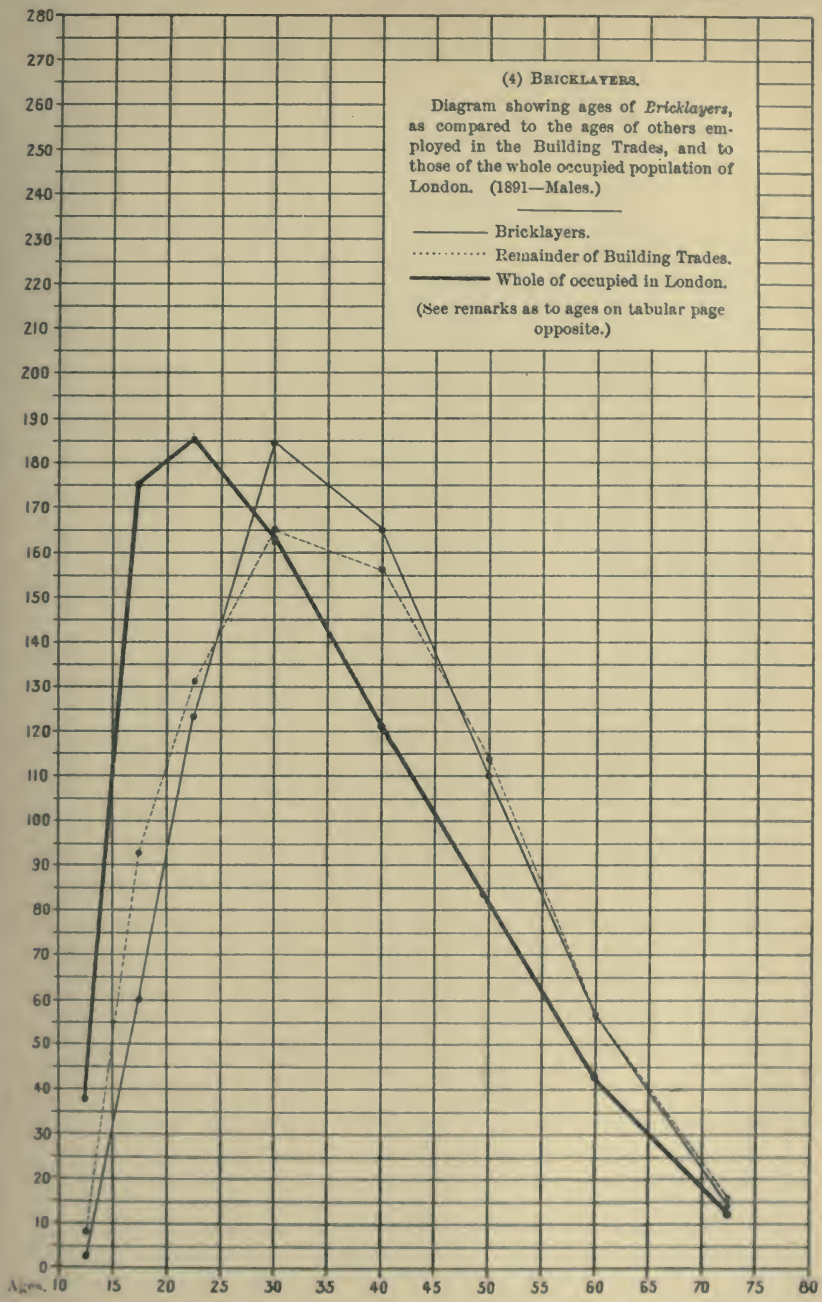
Scaffold builder, scaffolder, house pointer, hodman, bricklayer's labourer.

[This enumeration well illustrates the unsatisfactory character of the census classification.]

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employer.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males	Females	Under 20.	Over 20		Males	Females	
Bricklayer	261	—	975	17,748	16	427	—	19,427
Total.....	261		18,739			427		

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



Bricklayers.

The bricklayer is the recognized "stock hand" of the builder. His sphere of work is perhaps wider than that of any other section in the group, and it is consequently to the bricklayer that the most miscellaneous work can be given.

His industrial record in this country does not take us so far back as that of the carpenter, the mason and the tiler, but his position now, both numerically and by virtue of the offices performed, is, next to that of the carpenter, perhaps the most important in the whole trade.

His main duty is naturally "to set bricks and to do work connected with brick-work." In smaller towns and in the country he generally acts as mason, plasterer and tiler, and when trained in the country, as most London bricklayers have been, he has invariably some knowledge of all these branches of the trade. But it is almost needless to say that he does not follow them in London where the lines of demarcation between trade and trade are much too sharply drawn for this to be possible.

As the man of the trowel and the fixer of bricks the bricklayer is a familiar figure, and the deft laying on of the mortar, the quick placing of the brick in position, sometimes cutting it to size before so doing, and the final tapping to ensure a true level, have probably attracted the attention of most people and excited the envy of many.

But, as already indicated, the sphere of work of the bricklayer, even in such a centre of highly specialized skill as London, includes much besides the actual laying of bricks. One branch—the laying of drain pipes—has come to him during recent years. This work had previously been done

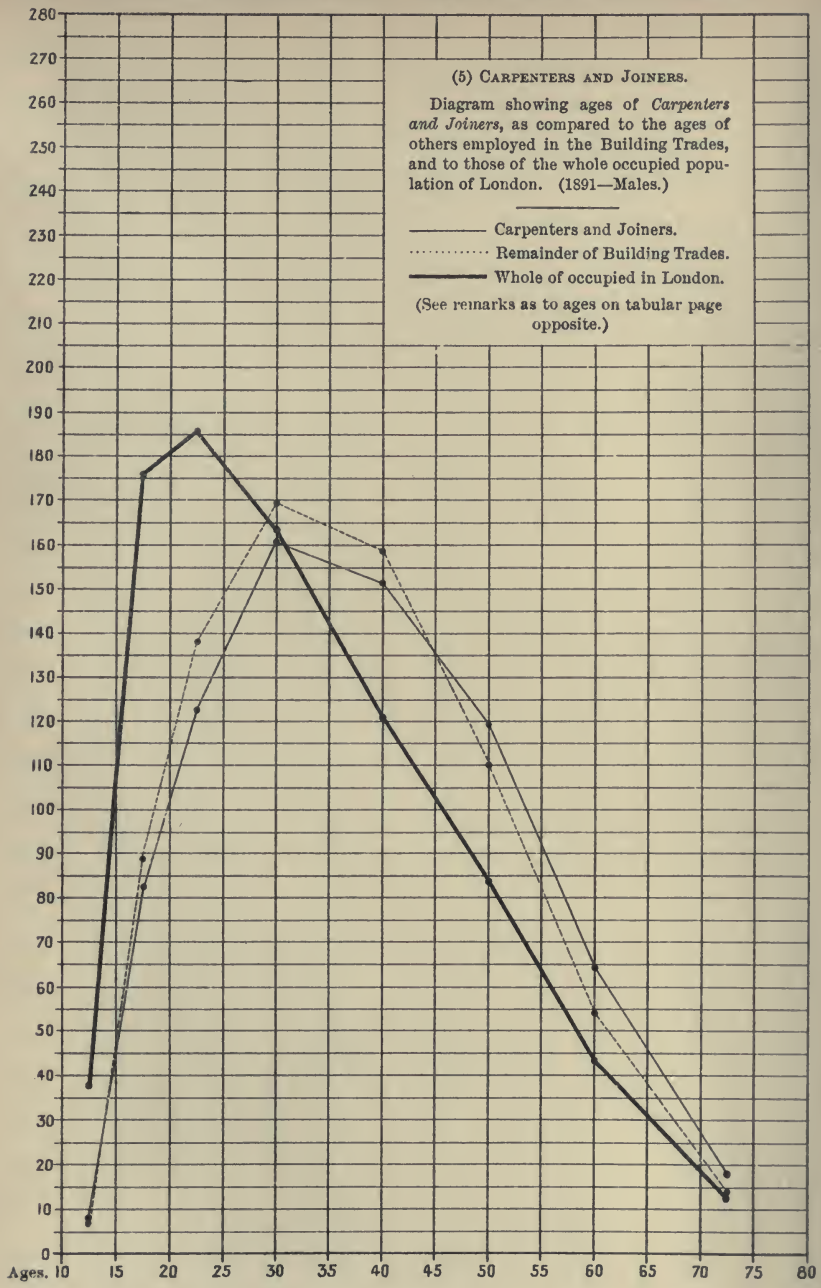
by the labourers, but the importance of securing good sanitary work and the complaints arising from the imperfection of unskilled labour, has gradually led to the transfer of most of this work to the hands of the skilled artisan.

The bricklayer also fixes the sills and heads of windows—except where there is much stone-work in the building, when the mason would claim it—sets chimney pots, ranges, stoves and hearthstones, and ordinary terra-cotta work.

Inside tiling, especially that which is fixed amidst brick-work, is also sometimes done by the bricklayer, and frequently the roof-tiling. His claim to the monopoly of the last branch of work gives rise to many interesting questions and will be discussed in the chapter dealing with overlapping.

The chief instances of specialization in this section are those of (1) "gauged work," that is, the shaping, rubbing, and setting the bricks in arches, cornices, &c. This work, for which the bricks have to be carefully measured, demands great skill, although the extending use of the modern moulded brick has diminished the demand for the special skill required in cutting the bricks to size. Many beautiful specimens of this art remain in old houses. (2) "Pointing," which, for old work, consists in raking out the decayed mortar between the bricks and stopping the cavities with fresh mortar. It is in this old work that specialization is most common. The work often includes washing and staining the brick face, and old houses thus renewed with a pointing of white or coloured mortar may frequently be seen. Pointing in much of the new suburban work is also done by the specialist, particularly in those houses and cottages in which a showy face is often made to cover the inferior materials and workmanship behind it.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CARPENTERS AND JOINERS. (*Section 5.*)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females.	Males.			Total.
	All Ages.	—19	20—54	55—	
(1) Carpenter and Joiner	123	2261	25,182	4766	32,332
(2) House and Shop-fitter ..	149	198	1615	200	2162
TOTAL. ..	272	2459	26,797	4966	34,494

There is a rather larger proportion of boys than in most of the other building sections, but, on the whole, the numbers rise steadily till 30 or 35, indicating the establishment in London of men trained in the provinces. After 50 the numbers fall off rapidly. (*See diagram.*) Many men trained as carpenters become caretakers, handy men, or jobbing builders, as they grow old, and no longer call themselves carpenters.

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
4621	8155	8208	13,610	34,494

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Skylight window-sash, wainscot-maker, stool, ladder, bench, seachest, packing-case-maker, floor dresser-planer, staircase builder, stage carpenter, carpenter's labourer, printer's joiner.

(2) Blind-maker, blind-fittings maker, shop front, show-case maker, bar-fitter, window-letter cutter, reflector maker, cornice, cornice-ring, door furniture maker, speaking tube, ventilator, heating apparatus, school apparatus maker.

Enumerated by Families.

Sex	Males		24,749	Heads of Families, 24,805.
	Females		56	
Birthplace	In London ..	41%	10,147	
	Out of London	59%	14,658	
Industrial Status ..	Employer	5%	1,133	
	Employed	88%	22,030	
	Neither	7%	1,642	

Note large proportion born out of London.

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	24805	23,139	67,009	568	115521
Average in family..	1	·93	2·70	·02	4·65

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	11,202	9·7
2 & under 3 ,,	25,151	21·8
1 & under 2 ,,	35,308	30·6
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	42,698	37·0
Less than 4 to 1 servant, and 4 or more to 2 servants	524	·4
All others with 2 or more servants ..	70	—
Servants	568	·5
	115,521	100

	Inner.	Outer.	Together.
Crowded .	44%	27%	31%
Not ,, ..	56%	73%	69%

DISTRIBUTION.

East ..	Inner	9894	14,397
	Outer	4503	
North	Inner	4615	26,750
	Outer	22135	
West..	Inner	2495	21,455
	Outer	18960	
Central	Inner	5368	5368
South-East	Inner	2748	21,441
	Outer	18693	
South-West	Inner	7662	26,110
	Outer	18448	
			115,521

Inner 32,782, or 28 %
Outer 82,739, or 72 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males.	Females	Under 20.	Over 20.		Males.	Females	
(1) Carpenter and Joiner.....	940	12	2261	27,212	103	1796	8	32,332
(2) House and Shop-fittings maker	238	12	198	1375	129	202	8	2162
TOTAL.....	1178	24	2459	28,587	232	1998	16	34,494
	1202		31,278			2014		

Carpenters and Joiners.

"The carpenters and joiners are the top-hats of the building trade." This statement was intended to express the fact that the above class, considered as a whole, is the best-conditioned in the group. This is roughly true. Perhaps from the character of the work, from the qualities necessary for the complete mastery of the craft, from the fact that all of joiners' and much of carpenters' work is done under cover, and that a somewhat less rough and robust type of man can pursue it; perhaps also from the traditions and associations of the calling and from the forethought involved in the necessity of acquiring valuable tools (at a cost varying from £10 to as much as £30), it has resulted that carpenters and joiners have been long recognized as embracing a large proportion of the *élite* among operative builders. An indication of the truth of this statement is found in the fact already mentioned that a great majority of foremen have had their training as practical carpenters.* But representatives of several other branches are also found, and in increasing numbers, in the ranks of the foremen, and the carpenter by no means monopolizes the symbolic "top-hat" of intelligence and respectability.

It would be impossible, but it will fortunately be unnecessary, to describe the various kinds of work that fall to the carpenter and joiner. Their main divisions may be generally indicated.

With the co-operation of the sawyer and the wood-working machinist, all wood used in building is manipulated

* Carpenters, more than any other class of artisan, work right through a building. This is almost equally true of the bricklayers, and, to a less extent, of the masons. The practical experience of these three classes, therefore, best qualifies them for the post of foremen.

either by the carpenter, or by the joiner, or by both. The full equipment of most buildings and of all dwellings will require the services of other workers in wood—such as the chairmaker, table-maker, and the cabinet-maker. But the products of these classes will, with very few exceptions, not be fixtures. The material as used by carpenters and joiners is, on the contrary, almost invariably worked into the permanent structure, and this quality of fixity largely differentiates their work from that of the various branches of the furniture trade.

Much of the wood used in building operations, after it has been sawn and machined, may be worked up either in the joiner's shop or on the building itself, and this leads to the main division of "carpenter" and "joiner." While the former work on the building, the latter work in the shop. While the joiner prepares work for fixing, most of the carpenter's work consists in fixing the work thus prepared. But not all. In addition to putting in the wainscotting, flooring, skirting, partitions, &c., which often come straight to the carpenter from the machinist's shop; and doors, window-frames, sashes, cupboards, panelling, &c., which must have had some, albeit often a small amount of joiner's work put into them, the carpenter will also have to fix the floor-joists, rafters, and the heavier timber used as supports in the structure. He will also fix the apparently solid beams that are so conspicuous a feature in modern timbered houses.*

The heavier structural work is called "carcase work," or "first fixing," and some men who only do, and can only do, this rougher work, are called "carcase hands." This is a special branch, and there are two others, viz. the staircase hands, and the shop-fitting hands. Of these branches, the

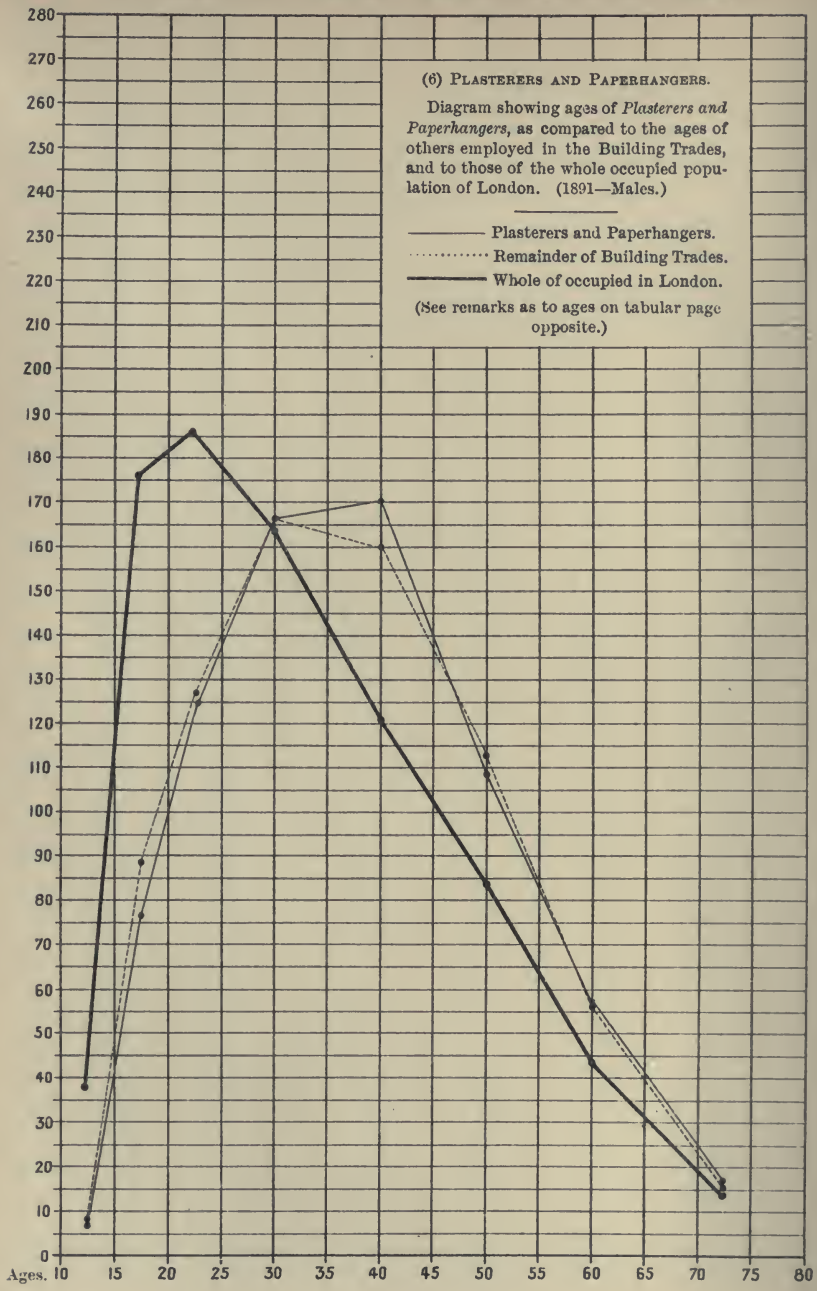
* Frequently, this showy timbering is purely ornamental, being composed of seven-eighth inch planks, with the surface exposed and coloured to represent the old solid wood-work of an Elizabethan house.

former is distinguished by the special skill required, the latter rather by the special purpose of the product than by any special demand made on the skill of the artisan—a good workman being able to qualify as a shop-fitting hand very quickly. An increasing quantity of staircase work is now being executed by the general joiner.

It should be noted that while, as a rule, men either work on the job or in the shop, there is a considerable amount of interchange. It is, however, rare to find that a first-rate joiner excels as a carpenter (*i.e.* fixer) and *vice versâ*. The tendency, therefore, is for men to specialize, and to work habitually either in the shop or out of it. The explanations of the exceptions to this rule are various, and would generally be found in the conditions of employment and capacity of the employed. Sometimes, however, inclination may lead to change, as in the case of one man who went outside for a time to enjoy more fresh air, and at others a valued shop-hand might be sent out because in this way only could work be found for him. On the whole, employment is more continuous in the shops, and it is to them that the best men tend.

"Carpenter" is the generic name of many handy men in the building trades, and this will partly explain the large total shown in the table on page 71, which exceeds by many thousands the number of really competent carpenters and joiners working in London.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



PLASTERERS AND PAPERHANGERS. (*Section* 6.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females.	Males.			Total.
	All Ages.	—19	20—54	55—	
Plasterer and Paperhanger	26	459	5531	875	6891

The age line of this section follows very closely that for the building trades generally. (See diagram.)

Enumerated by Families.

Sex	Males		5106	Heads of Families, 5111.
	Females		5	
Birthplace	In London	65 %	3341	
	Out of London	35 %	1770	
Industrial Status	Employer	4 %	211	
	Employed	86 %	4405	
	Neither	10 %	495	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	5111	4983	14,848	46	24,988
Average in family..	1	·97	2·91	·01	4·89

Distribution.

E.	N.	W. & C.	S.	Total.
304	1791	2075	2431	6891

Classification.

Numbers living in Families.		%
3 or more to a room	5316	21·3
2 & under 3 ,,	7367	29·5
1 & under 2 ,,	6322	25·3
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant..	5891	23·5
Less than 4 to 1 servant, and 4 or more to 2 servants	35	·2
All others with 2 or more servants ..	11	—
Servants	46	·2
	24,988	100

	Inner.	Outer.	Together.
Crowded..	62 %	48 %	51 %
Not	38 %	52 %	49 %

Distribution.

East ..	Inner 1685, Outer 439	2124
North	Inner 1187, Outer 4948	6135
West ..	Inner 449, Outer 6352	6801
Central	Inner 674	674
South-East	Inner 237, Outer 3668	3905
South-West	Inner 1352, Outer 3997	5349
		24,988

Inner 5584, or 23 %
Outer 19,404, or 77 %

Details of Occupations (from the Census Dictionary).

Stucco pointer, lath-nailer, whitewasher, paper varnisher, paste boy.

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employers.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males.	Females	Under 20.	Over 20.		Males	Females	
Paperhanger, Plasterer, Whitewasher ..	236	3	459	5563	20	607	3	6891
TOTAL.....	239		6042			610		

Plasterers.

The most important part of a plasterer's work is that of covering the rough brick-work or other structure of walls and ceilings. For this, in good work, there are three processes: (1) "Pricking up" or "rendering," *i.e.* putting on the coarse stuff in order to make a rough surface to which the second coat will adhere. (2) The "Floating," that is, adding a coating of plaster and lime on which (3) a final coating of the same materials, washed and finely screened, is put. Keene's or Parian cement is used for angles.

The quality of plasterer's work varies more, perhaps, than that of any other branch, owing largely to the ease with which bad workmanship can be concealed and adulterated materials employed.

Much skill and experience are required in mixing materials, in setting out the work correctly, in securing a perfectly even surface, and in making a neat finish of angles, mitres, and the enrichment of cornices, but there is little, if any, specialization, men being graded almost solely according to their skill.

A few plasterers are employed in the manufacture of the fibrous plaster slabs and cornices, the use of which displaces much of the plasterer's labour. In the setting out of this work a skilled operative plasterer is required, but the actual fixing is effected with nails or screws, and does not demand the services of skilled men. A thin setting coat to cover joints is all that is required by way of finish.

The "lathing," *i.e.* fixing the laths (made by the lath-render) to the joists in ceiling work, so as to give the required "key" for the first coating of rough plaster, is sometimes claimed by the plasterers, but in London is

almost entirely executed by the "lathers," who confine themselves to this work. The fibrous plaster work and the employment of wire and metal lathing are not unlikely to bring about a considerable dislocation of plasterers' work during the next few years.

Another branch of work, to some extent executed by the plasterers, is that of fixing inside tiling. Much of this is done by the specialists employed by the firm whose tiles are being used, and some is claimed by the bricklayers, but much still remains in the hands of the plasterers.

Outside plasterers' work, in the shape of stucco, is not very common at the present time. It has for the most part given way to fancy brick or tile-facing, and terra cotta. The change has been largely due, undoubtedly, to a genuine alteration in public taste, but is also to be partly attributed to the adulteration in the past, with its inevitable sequel of peeling and ugliness. Many of the frontages in Victoria Street are cited as instances of good solid work of this kind, but the street is not distinguished for its picturesque or bright appearance. "Compo" work, a facing of cement and rough gritty sand, is not infrequently introduced in some styles of villa and cottage dwellings, and this is also plasterers' work.

Paperhangers and *whitewashers*, though included here in the census, are now more closely connected with the painters, and are considered in the next section.

PAINTERS AND GLAZIERS. (*Section* 7.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females.	Males.			Total.
	All Ages.	—19	20—54	55—	
Painters and Glaziers	161	1947	26,858	3700	32,666

The diagram shows, as with the other sections of building, a great preponderance from 30 to 60 years of age, telling of influx from the provinces, and with regard to this section in particular, of a trade to which men often turn late in life. Every sailor is a painter.

Distribution.

E.	N.	W. & C.	S.	Total.
3791	8330	9119	10,826	32,666

Details of Occupations (from the Census Dictionary).

Mural artist, church decorator, stenciller, grainer, glass writer, sign painter, wood stainer, plate-glass fitter, lead glazier, window cleaner.

Enumerated by Families.

Sex	Males		22,934	Heads of Families, 22,982.
	Females		48	
Birthplace	In London	65 %	14,846	
	Out of London ..	35 %	8136	
Industrial Status ..	Employer	7 %	1549	
	Employed	84 %	19,427	
	Neither	9 %	2006	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	22,982	20,611	61,924	439	105956
Average in family ..	1	·90	2·69	·02	4·61

Classification.

Numbers living in Families.		%
3 or more to a room	22,044	20·8
2 & under 3 ,,	29,672	28·0
1 & under 2 ,,	27,360	25·8
Less than 1 ,,		
More than 4 rooms	25,934	24·5
4 or more persons to a servant ..		
Less than 4 to 1 servant, and 4 or more to 2 servants	412	·4
All others with 2 or more servants ..	95	·1
Servants	439	·4
	105,956	100

	Inner.	Outer.	Together.
Crowded ..	59 %	44 %	49 %
Not	41 %	56 %	51 %

Distribution.

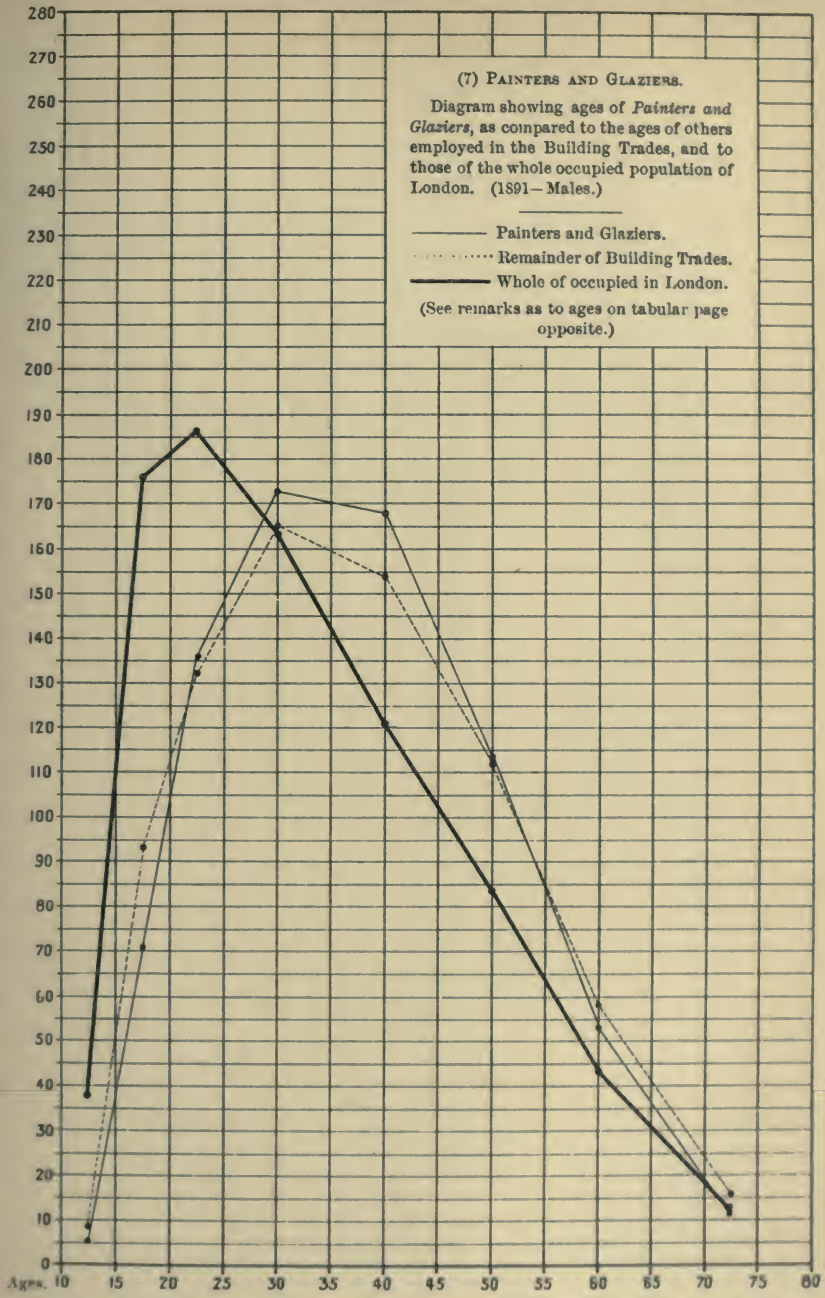
East ..	Inner 8995	Outer 3588	12,583
North	Inner 7483	Outer 21635	29,118
West ..	Inner 2580	Outer 20654	23,234
Central	Inner 4918		4918
South-East	Inner 2045	Outer 13407	15,452
South-West	Inner 6509	Outer 14142	20,651
			105,956

Inner 32,530, or 31 %
Outer 73,426, or 69 %

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employers.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males.	Females	Under 20.	Over 20.		Males	Females	
Painter and Glazier	1625	22	1947	26,434	120	2499	19	32,666
Total.....	1647		28,501			2518		

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



Painters, Decorators, Glaziers, &c.

The painters form perhaps the most disorganized and composite group in the building trade, not excepting the labourers. The chief explanation of this is found in the character of their work, for the class includes many kinds of operatives, from the "brush-hand" who has picked up a certain knack, and who may be anything (or nothing) from a sailor to a waiter or a scene-shifter; or from the mere hanger-on, supported by his wife's earnings when he has no painting job on hand, to the highly-skilled decorator, who, constant to the craft of which he is a master, would consider it an indignity to be ranked with the industrial gadabouts who call themselves his fellow-craftsmen.

A thoroughly competent painter is qualified to work as a decorator, gilder, glazier and paperhanger, but the scope afforded for division of labour in London has led naturally to some measure of specialization. Thus, while many are not able to decorate or gild, others of the more highly skilled do nothing else, and while some do no paper-hanging, others keep exclusively to this work. It is the same with glazing, the measure of specialization being roughly found in the scope for the division of labour offered by the operations of the individual employer. The all-round man of inferior skill is most frequently found in the employment of the small jobbing builder.

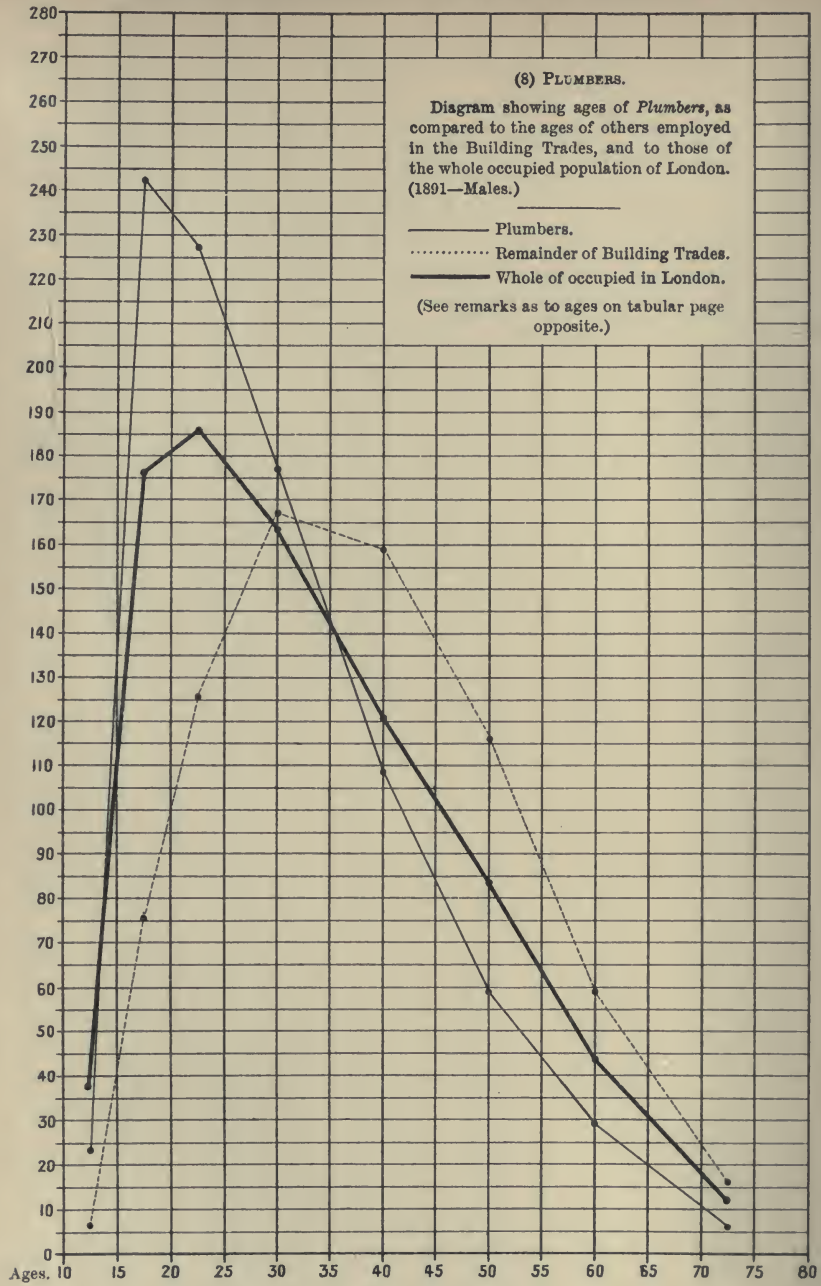
Whitewashing, which was formerly considered part of the plasterer's work, is now almost exclusively done by painters or labourers.

Much of the glazing of new work is executed by the specialist employer on his own premises. The sashes are

sent to him from the joiner's shop, are glazed by his own men, and sent to the building ready for fixing.

Much good work is done in this way, but when the glaziers are allowed to do any of the painting, certain disadvantages tend to accompany the practice. There is increased difficulty in detecting the use of inferior wood, for judicious "stopping" and painting may easily cover serious defects. Moreover, unscrupulous firms are in the habit of "sheep-skinning," that is, of giving a coat of red lead and size instead of oil-priming to the wood. The former dries quickly and is thus a very convenient substance to use, but it does not give a surface, or body, to which the putty used in glazing will adhere. The main purposes served by painting are those of preservation and decoration, but it seems that a third purpose, of deception, must be also enumerated.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



PLUMBERS. (*Section* 8.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
Plumber	24	1963	6783	571	9346

The excess of boys shown in the diagram opposite is balanced by the lack of them in other building sections.

Enumerated by Families.

Sex	Males		5127	Heads of Families, 5141.
	Females		14	
Birthplace	In London	62%	3189	
	Out of London .	38%	1952	
Industrial Status ..	Employer	13%	644	
	Employed	75%	3862	
	Neither	12%	635	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	5141	4121	14,794	142	24,198
Average in family..	1	·80	2·87	·02	4·69

Distribution.

E.	N.	W. & C.	S.	Total.
915	2332	2469	3630	9346

Classification.

Numbers living in Families.		%
3 or more to a room	2895	12·0
2 & under 3 ,,	5309	21·9
1 & under 2 ,,	6852	28·3
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	8883	36·7
Less than 4 to 1 servant, and 4 or more to 2 servants	114	·5
All others with 2 or more servants....	3	—
Servants.....	142	·6
	24,198	100

	Inner.	Outer.	Together.
Crowded..	46%	29%	36%
Not ,, ..	54%	71%	64%

Distribution.

East ..	Inner 1768 / Outer 758	2526
North	Inner 1484 / Outer 4715	6199
West ..	Inner 615 / Outer 4272	4887
Central	Inner 1217	1217
South-East	Inner 453 / Outer 3827	4280
South-West	Inner 1295 / Outer 3794	5089
		24,198

Inner 6832, or 28 %
Outer 17,366, or 72 %

Details of Occupations (from the Census Dictionary).

Gas-fitter, plumber's labourer.

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employers. Males	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Female of all ages.	Neither Employer nor Employed. Males	Neither Employer nor Employed. Females	Total.
Plumber	712	8	1963	5878	14	769	2	9346
TOTAL	720		7855			771		

Plumbers.

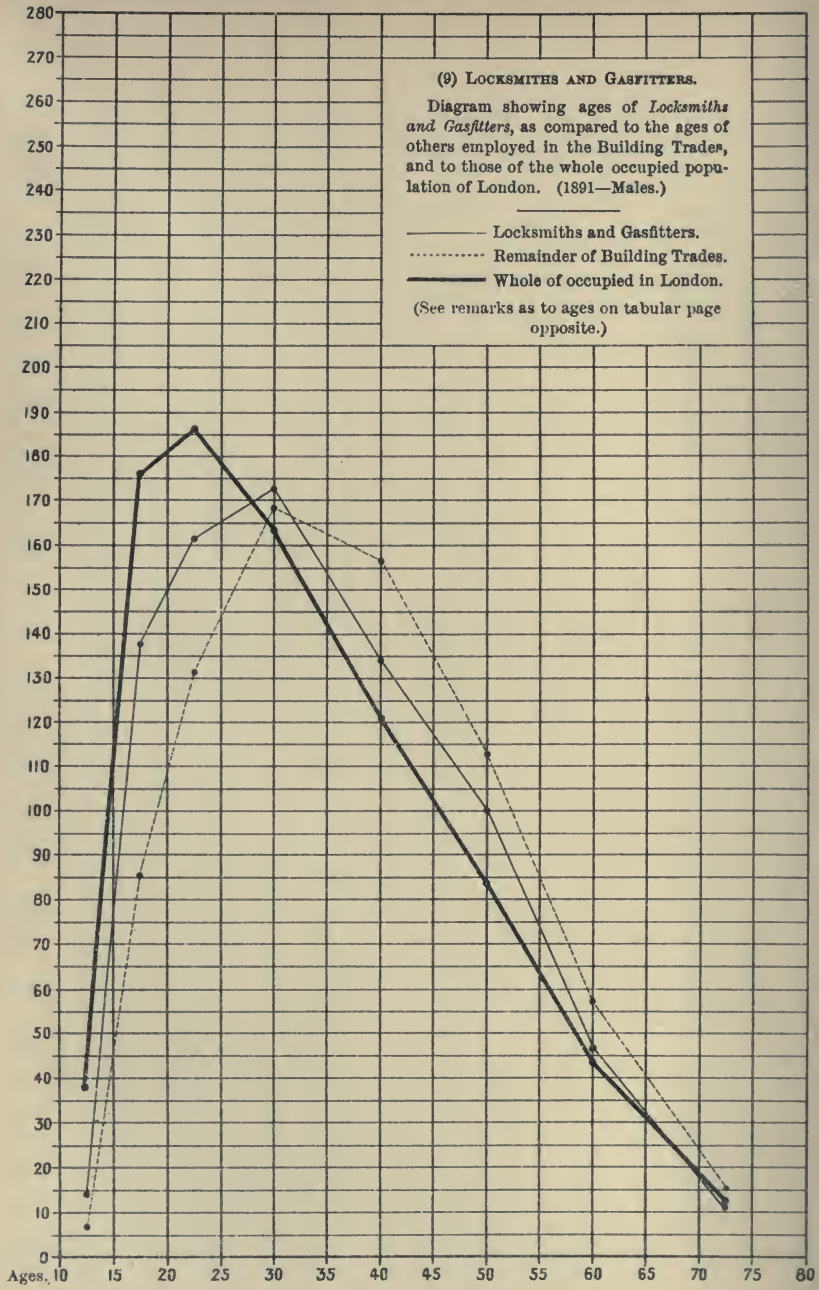
The work of the plumber may be roughly divided into the two main divisions of (1) Roofing, and (2) Sanitary work. In London he works chiefly in lead, differing in this respect from his provincial brother, by whom a much larger proportion of iron-work is also executed. Thus, in the country—except in the large industrial centres—the plumber generally does the hot-water work, while in London this is more frequently executed by the hot-water fitter.

The actual division of plumbers' work on the one hand, and of the fitters on the other, is one of the numerous cases of overlapping found in the building trades; and is at the present time under the consideration of a joint committee that has been appointed by the trades concerned.

The scope of plumbers' work has been curtailed during recent years by the substitution of iron fittings for lead in much sanitary work; by the extending use of zinc in roofs instead of lead, followed by the formation of a separate class of zinc-workers; and by the wholesale manufacture by machinery of many of the sanitary fittings that had been formerly made by the plumber himself. It is thus sometimes his complaint that he is becoming simply the fixer of products made by other people. But this is an exaggeration; as, although it is true that he has more fixing to do than in previous years, the importance attached to all sanitary work is steadily increasing, and secures to the plumber, who is its chief executant, an increasing importance and responsibility.

There is a difficulty in enumerating, with even approximate accuracy, the number of men in London who are entitled by reason of their training either as apprentices or "mates" to be regarded as plumbers, many men of the class referred to under the head of "fitters," and others, swelling the ranks of the nominal plumber.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



LOCKSMITHS, &c. (*Section* 9.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
Locksmith, Bell-hanger, and Gas-fitter	48	638	4081	545	5312

We have here a trade of middle-age. There are fewer young men and not more old men than in the whole occupied population. (*See* diagram.)

Distribution.

E.	N.	W. & C.	S.	Total.
636	1432	1489	1735	5312

Details of Occupations (from the Census Dictionary).

Makers of all kinds of locks and keys.
Manufacturers of gas pipes, fittings and stoves.
Gas engineer, lamp-post fixer.

Enumerated by Families.

Sex	Males		3475	Heads of Families, 3492.
	Females		17	
Birthplace	In London ...	62 %	2169	
	Out of London ..	38 %	1323	
Industrial Status ..	Employer	8 %	286	
	Employed	79 %	2766	
	Neither	13 %	440	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	3492	3214	9672	113	16,491
Average in family ..	1	·93	2·77	·03	4·73

Classification.

Numbers living in Families.		%
3 or more to a room	2152	13·0
2 & under 3 ,,	4372	26·6
1 & under 2 ,,	4655	28·2
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	5068	30·8
Less than 4 to 1 servant, and 4 or more to 2 servants	105	·6
All others with 2 or more servants ..	26	·1
Servants	113	·7
	16,491	100

	Inner.	Outer.	Together.
Crowded ..	51 %	33 %	40 %
Not ,, ..	49 %	67 %	60 %

Distribution.

East ..	Inner 1541	Outer 442	1983
North	Inner 955	Outer 3273	4228
West ..	Inner 567	Outer 2695	3262
Central	Inner 1282		1282
South-East	Inner 296	Outer 2186	2482
South-West	Inner 1213	Outer 2041	3254
			16,491

Inner 5854, or 35 %
Outer 10,637, or 65 %

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employers. Males	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
Locksmith, bellhanger, &c.	318	5	638	3787	41	521	2	5312
	323		4466			523		

Smiths and Fitters.

These are metal workers, whose sphere of work is much wider than that covered by building operations. As a class they will be dealt with more fully, therefore, in Chapter II. of Part III.

The lock-making industry has no necessary connection with the building trades, but stands in the same relation to this group as do those engaged in the production of all branches of builders' ironmongery. It is allied rather to the engineering trades, although the best lock-making is hand-work on which but little machinery is employed. The amount of lock-making, however, now carried on in London is very small, the trade being localised almost entirely in Wolverhampton and the neighbourhood. There is one important firm which manufactures locks in London; but, with this exception, and the exception of the locksmiths employed by other firms of lock and safe manufacturers, neither lockmakers nor locksmiths are found in London as a special class, the latter, excepting those employed by specialist firms, doing all kinds of smith and fitting work.

As a builder's operative, the smith is the maker of the wrought-iron goods required, such as railings, &c. The fitter, in addition to completing the smith's work, also fixes much of the cast-iron used in the building. He is often not differentiated in practice from the smith, it being a common usage—especially in the smaller firms—for the same man both to make and fix the wrought-iron work.

Fitters are not infrequently employed to make the necessary connections between the metal girders, joists, &c., that have been put in position by the hoisters, but in many cases rivetters are sent down for this purpose.

The term "fitter," now in common use, includes in its meaning that of the nearly obsolete "whitesmith,"

by which was understood the gas and hot-water fitter. Bell-hanging, the demand for which is being seriously diminished by the use of the electric bell, is also part of the fitter's work.

The separation of the plumber and fitter is less complete in much of the building trade, than is indicated above. The field of the gas and hot-water fitter's work, for instance, may sometimes be covered by the plumber, and some who describe themselves as fitters claim to be "seven-branch men," able to execute with equal readiness gas fitting, bell-hanging, lock-smithing, electric fitting, hot-water fitting, black-smithing, and plumbing. Workmen of this class are, for the most part, employed in work of a "jobbing" kind, and much of the "scamped" plumbing which is so common may be traced to them. To a considerable extent they represent the "handy men" of the "jerry builder," and also work for the small tradesmen who carry on businesses as "ironmongers," "sanitary engineers," or "builders," and undertake repairing work in poor neighbourhoods.

Crane and Engine Drivers, Machinists, and Sawyers.

The first two of these classes embrace the men who work the large Scotch derricks, "steam navvies," and the portable engines used for mixing and crushing mortar, &c. It is stated that two-thirds of the members of the Amalgamated Protection Union of Engine Drivers and Crane Drivers, formed in 1889, are employed in the building trades, but their work is of wider scope, and will be referred to in a later volume, in sections dealing with Labour generally.

Wood-working machinists and sawyers fall also somewhat outside the scope of this chapter, although the proportion working in connection with the building trades is

much greater than that of the engine drivers and crane drivers—the machinist's shop, for planing, moulding, mortising, and turning, being now an *annexe* of every large joinery works.

There is a considerable amount of specialization, few machinists, it seems, qualifying themselves to work with equal ease the various kinds of machines in use. On the other hand, the machinists and sawyers are not sharply divided, men moving frequently from one class of work to the other. A large number of machinists have entered the trade as joiners, taking subsequently to the machine work.

The "trade mills," *i.e.* shops to which wood can be sent by the builder or joiner for machining, stand in somewhat the same relation to the building trade that the saw-mills do to the furniture trade. In each case they enable the man of small capital to secure some of the economies of machine work, but power is rarely, if ever, let off to separate occupiers as in the case of the saw-mill, nor (the requirements of capital in other directions being necessarily much more considerable in the building trade) do these trade mills facilitate the multiplication of the small employer as do the saw-mills in the furniture trade.

Miscellaneous Branches.

There are in the building trade many subsidiary special branches allied as a rule to one or another of the above main divisions. Most of them are indicated on the tabular page which precedes each section, and their enumeration and description are unnecessary here.

CHAPTER III.

CONDITIONS OF EMPLOYMENT

The particulars given in some of the interviews with operatives are summarized on the succeeding pages, and the whole have, so far as practicable, been tabulated, 124 cases having been thus dealt with, comprising:—

Bricklayers	23
Masons	5
Marble masons	2
,, polishers	2
Slaters and tilers	2
Carpenters and joiners ...	32
Plasterers	13
Fibrous plaster workers ...	2
Tesselated tile workers ...	2
Plumbers	6
Painters	13
Smiths and fitters	5
Machinists	2
Labourers	15
Total	124

Some of the results of this tabulation will be used throughout the rest of this chapter, but the material would frequently afford a basis for a much fuller treatment of individual cases than has here been possible, and many of the particulars, especially those relating to personal as distinguished from industrial conditions, that have been willingly furnished to us, must necessarily remain unused in this volume. As regards most of the subjects dealt with, the information given would be quite insufficient to furnish a basis for general conclusions. The tables are useful, however, as supplementing, in a certain number of actual cases, the information drawn from other sources, and they are very human in the tale they tell.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(1) General stone-mason	39	Country	20 years	Wife and 15 children (8 alive)	4	7/-	—	Yes; Operative Stone Masons' Union	Yes; slate club (formerly Hearts of Oak, but run out)
(2) Stone, marble, and slate-mason	30	London	—	Wife and 4 children	6 and 2 sculleries	13/-	No	Ditto	Hearts of Oak
(3) Stone-mason	50	Country	30 years	Wife and 4 children	4-roomed house	6/6	No	Ditto	Hearts of Oak
(4) Marble-mason	33	Country	17 years	Wife and 3 children	5	13/-	No	Marble and Slate Masons' Union	Slate Club, Yard Club
(5) Marble-polisher	40	London	—	Wife and 4 children	3	6/-	No	Yes	Yard Club
(6) Bricklayer	40	Country	—	Wife, no children	3-roomed house	10/6	No	Operative Bricklayers' Society	—
(7) Bricklayer	36	London	—	Wife and 7 children	3	7/6	—	Ditto	Loyal United Friends

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(1) There is a good deal of shifting; he has had twenty-six employers during last five years.

(2) Trade busy in summer and slack in winter. Work very irregular—"two months is a long job." Masons' and bricklayers' work overlaps; there is dispute as to terra-cotta work.

(3) Has about three jobs a year—"twelve months is a long job." Considers that terra-cotta work belongs to bricklayers, especially as masons would expect 10¼*d* an hour for fixing it.

(4) Shifting very frequent. There is overlapping (*a*) with tilers, who do marble floors at piece-work; (*b*) with plumbers, who try to do sanitary slate-work.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Son of mason's foreman, and therefore not apprenticed	—	—	Just on	Master mason	—	—	44½-50	9½*d*	—
Apprenticed	5 years	London	4 months	Builders & church decorators	From union lodge	A man is handicapped at 50, especially if not well-known	44½-50	9½*d*	Only 7 hours in last 3 years
Apprenticed	5 years	Country	4 months	Master mason	Unemployed book and "goes round"	—	44½-50	9½*d*. 10½*d* when fixing	None
Worked with father and then served apprenticeship in London	—	—	3½ years	—	Goes and asks; also through unemployed book of trade society	—	50-54	9½*d*	None
Average boy	—	—	2 years, short break, and then 10 years	—	Goes and asks; also through unemployed book of trade society	—	50-54	7½*d*	None
Originally a plasterer, but was taught by a working bricklayer	3 years	—	As foreman for 8 months, but now out of work	General builder	Goes round	Unless well-known a grey-haired man is always passed over for a younger man	44½-50	9½*d*. 11*d* as foreman	A great deal at last employer's. Union rates were paid
Apprenticed	4 years	London	6 months, and on and off for 7 years	Jobber and contractor	Goes round	—	44½-50	9½*d*. Has been foreman bricklayer at 10½*d* & general foreman at 11*d*	Very little and gets overtime rates

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

5) Much shifting. He is employed chiefly on church work.

3) Trade is busy in summer; he reckons to lose six to eight weeks in the year. There is overlapping with tilers.

7) Summer busy; winter slack. Has lost one month in last five years. As a piece-master he has sometimes made as much as £15 in one week on G. E. R. work. Now believes in giving others a chance.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(8) Bricklayer	29	Country	8 years	Wife and 2 children	4	5/6	No	Operative Bricklayers' Society	Yes
(9) Bricklayer (Deputy Foreman)	39	Country	22 years	Wife and 5 children	6	7/-	No	Ditto	Yes
(10) Carpenter and joiner	36	Country	14 years	—	8 (part let)	—	—	Amalgamated Society of Carpenters and Joiners	—
(11) Joiner	—	Country	—	—	—	—	—	Ditto	—
(12) Joiner	45 (about)	London	—	—	8 (lets 4)	—	No; but dislikes holding branch meetings in public-houses	Ditto	—
(13) Carpenter and joiner	—	Country	19 years	—	—	—	—	Ditto	—
(14) Joiner	53	—	—	—	—	—	—	Ditto	Hearts of Oak

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(8) Busy in summer; slack in winter. There is a good deal of shifting. Work overlaps th of tilers.

(9) Busy Easter to Christmas; slack afterwards till Easter. Does not shift much himself.

(11) Has lost no time since the strike of 1891.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Apprenticed	3 years	—	3 months	General builder	Searches for it. Gets friendly hints. Never uses call-book	—	Building trade hours	9½*d*	Does not work overtime
Informal apprenticeship with father	6 years	—	5 years	Builders and contractors	Through friendly foreman	—	Building trade hours	10*d*	None
Apprenticed (12-14). "Few apprentices now. Lads go as glue-boys"	5 years	Country	—	Builders. Small shop, which he prefers, as more friendliness is shown & work better done	—	Men get little mercy when they begin to look old	—	—	Little since strike. Used often to work 11½ hours a day for long periods
Learnt with his father, who was a joiner	—	Country	—	—	—	Average man begins to fail at 50, but some last longer	44½-50	9½*d*	Great deal before the 1891 strike but very little now
Apprenticed at small shop at West End	—	London	1 year	—	—	Men begin to fail at 50, but knows a man of 75 who sets out work at a firm	44½-50	9½*d*	Greatly reduced since 1891 strike, and especially since agreement of 1892
Apprenticed. Paid premium of £30	7 years	Country	2 years	Small firm, work mostly done by hand	Walking about	—	44½-50	9½*d*	Never had much overtime. Is now forbidden by the rules
Apprenticed	5½ years	Country	25 years off and on	Large builders	Walks from job to job and talks to unionmen	—	44½-50	9½*d*	Very little because of extra pay

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(2) Had a bad time in 1891, but since the strike he has only lost five days.
(3) Has had five or six employers in nineteen years; never out of work for long. There is overlapping with shipwrights.
(4) Slack just before, and just after, Christmas. There is not much changing at his firm, which employs three hundred men constantly.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(15) Carpenter and joiner. Has been foreman inside and out, but now at the bench	37	London (but went to the country as a boy)	12 years	Wife and 5 children	4-roomed house	11/6	No	Amalgamated Society of Carpenters and Joiners	Hearts of Oak
(16) Carpenter and joiner	42	Country	21 years	Single	1	4/-	—	Not for 20 years	Not for 8 years
(17) Machinist	28	London	—	Single	1	7/6	—	Mill Sawyers' and Machinists' Union	A.O.F.
(18) Plasterer	33	Country	2 years; also some years in 2 provincial towns other than birth-place	Wife and 1 child	3	6/-	No	National Association of Operative Plasterers (full member)	No
(19) Plasterer	62	London	—	Wife and 10 children (5 at home)	4-roomed house (1 let)	12/- lodger pays 4/-	—	Ditto	"Star in the East"
(20) Fibrous plasterer and slab fixer	50	London	—	Wife and 7 children (4 at home)	6-roomed house	7/6	No	Fibrous Plasterers' Union	No

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(15) Work is slack in winter. He shifts every few weeks, but loses no time between jobs. Has not lost a week for twelve years. In his trade there is overlapping with cabinet-makers. As to dispute between bricklayers and tilers; he has been a general foreman at £3. 5*s* a week, and his experience is that bricklayers cannot lay tiles as well as the tilers. Tiling has been a trade as long as he can remember, and it is the bricklayers, plasterers, and labourers who keep the tilers out of the Federation.

(16) Has been out of work for eleven weeks, and has only had seven weeks' work out of last twenty-seven. Time of year does not make much difference.

(17) He had a twelve months' job before the present one.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Apprenticed. Regrets that so few are now apprenticed"	5 years	Country. "The countryman is a better and harder worker than the Cockney"	3 weeks	Jobbing builders	(1) Unemployed books. (2) Clubs. (3) Pubs. "Anyman 'in the know' can get a job"	About 50, since one dare not wear glasses	44½-50	9½. 10*d* as foreman	Not much since Nov., 1892
Apprenticed	6¼ years	Country	5 years off and on	Last employment was in East London. Is now out of work	Goes round	—	44½-50	9½*d*	None
Picked up	—	London	1½ years	Contractors	—	—	44½-50	9½*d*	2 hours a day since October, but gets union overtime rates
With father	—	Country. Was getting 6*d* an hour when only 15. Journeyman's rate was only 7½*d* then	Few days	A sub-contractor in plaster work	Unemployed book and goes round	Old men now stand a better chance, owing to the elimination of many driving sub-contractors	44½-50	9½*d*. Has been foreman at 10½*d*	None last year; a little since Christmas but union rates are paid
With father	5 or 6 years	London	15 years off and on	Contractor	Goes round	—	44½-50	9½*d*	Very little Union rates are paid
Hawk-boy, then plaster. (Can only do plain plastering)	7 years	London	3 years off and on	—	—	—	56½ (if not on building)	8½*d*. No piecework since F.P. Union was formed	—

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(1) Seasons vary; sometimes the winter trade is as brisk as the summer. He had six jobs last year, and was out of work two months. Plasterers occasionally go into gasworks in winter, and may earn nearly £2 a week.

(2) Summer busy; winter slack. He usually has ten or eleven months' work in the year. Last year he was ill for twelve weeks, and lost five months' work altogether. A few plasterers go into gasworks in winter.

(3) Busiest in winter; no special reason for this, except, perhaps, that architects specify for fibrous plaster work, knowing it can be done in winter.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(21) Tesselated and mosaic tile fixer	37	Country	29 years	Wife, no children	6-roomed house; no lodgers	—	—	Tesselated Tilers' Union	No
(22) Painter	45	London	—	Wife and 3 children at home	2-roomed house	£13 (including taxes)	—	London and Counties' Painters' and Decorators' Union	Oddfellows
(23) Painter	32	London	—	No family	4-roomed house	7/6	—	Ditto	Slate Club
(24) Painter	28	London	—	Wife and 2 children	4 rooms and scullery	8/6	Yes	No	No
(25) Painter	20	London	—	Wife and 2 children	2	3/6	No	No; but used to formerly to the London and Counties	Oddfellows
(26) Painter	62	Country	52 years	Wife and 4 children, but only 1 at home	6 but 2 are let	10/6, but 2 rooms let for 5/-	No; dropped out last winter	No; dropped out last winter	No; run out of Loyal United Friends
(27) House decorator	29	London	—	Wife but no children	2	5/-	No	No	No

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(21) Busy in summer. Lost no time last year, but usually loses six or seven weeks. There is overlapping with plasterers and bricklayers.

(22) From beginning of March to end of June is busy, and also August and September. He sometimes goes into the country during July. He had twelve jobs last year and nine months' work.

(23) Winter is slack. He loses five months out of the twelve.

(24) Busy in spring and summer. Shifted very little until this year. In slack time he goes hawking, or works at a print shop, or gets jobs on the ice. Drink is the cause of a great deal of distress among painters. Present slackness is largely due to the excessive number of unskilled painters who creep in after a few months' training.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Picked up as boy	5 years	London	5 years off and on	Tile manufacturers and fixers	Call-book and goes round	Age is no great disadvantage. Damp and draughts cause rheumatism	44½-50	10*d*	Very little. Union rates are paid
Picked up as a boy	7 years	London	14 years off and on	Jobber	—	Some men working are 60 years of age, but age "goes against you"	44½-50	8½*d*, occasionally 9*d*	Not much now, but gets overtime rates
Picked up with a master man	7 years	London	6 months	Jobber	Unemployed book and goes round	—	44½-50	8½*d*. L. C. C. rate, extra ½*d* or 1*d* for leading hand	Great deal, but overtime rates are not usually paid
Picked up as a labourer	—	—	Few weeks. 5 years with few breaks	Relief works and general builder	—	—	61	8½*d* at relief works, 7½*d* at builders	Usually gets time and half after 4 on Saturdays
Picked it up as labourer. Was apprenticed as a plasterer, but gave it up, owing to an accident	—	—	1 month	Relief works (now), master painter (formerly)	—	—	55-60	8*d*, but 8½*d* if in a society shop	Occasionally gets time and a quarter
Apprenticed	7 years	London	5 years off and on	Jobber	—	—	—	8*d* in one firm, 9*d* in another	
Father was in the trade	7 years	London	About 18 months out of last 2 years	House decorator	Goes round	—	11 in summer, 8 in winter	7½*d*-8*d*	—

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

25) Busy in spring. He usually has pretty regular work, but owing to illness has lost fifteen weeks since Whitsun. Sometimes works as general labourer. There is not a single employer in his district that pays 8½*d* an hour, and he therefore found it was impossible for a unionist to get work.

26) Busy from March till June, and August till September. Has not worked three weeks during last five months.

27) A man may have twelve employers in a year. He has been out of work for some time.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(28) Plumber	35	London	—	—	4	10/6	—	Yes: United Operative Plumbers' Society.	Royal Standard
(29) Plumber and zinc worker	25	London	—	Single	Lodger	Pays 12/- for board and lodging	No	No	No
(30) Plumber	24	London	—	Single	—	Lives with his parents	—	No	Hearts of Oak
(31) Black-smith (makes and fits wrought iron-work)	49	Country	27 years	Wife and 7 children	8 (lets 3)	16/- (lodgers 8/-)	No	No	Hearts of Oak (24 years)
(32) Gas, hot-water fitter, and general engineer	42	London	—	Wife and 5 children	6	8/-	No	No	Oddfellows and Loyal United Friends

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(28) Plumbers are not much affected by bad weather. He has a permanent job; but most jobs only last a short time.

(29) He does not lose six weeks during the year.

(30) In this trade there is not much difference between winter and summer. He loses about three months in the year.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Not apprenticed. Began as a boy of 13; then became a mate, and was a mechanic at 25	—	London	6 years	—	(1) By associating with other men. (2) Unemployed book	Not 10 % are over 55	42-47	10½*d*	Very little
Apprenticed	3 years	London	—	On his own account, and does jobs by the piece. Does roof and sanitary work, &c.	Comes to him	—	—	About 9*d* an hour	—
With father, who is a master plumber	—	London	—	Master plumber	—	—	44-47	10½*d*	None
Apprenticed	4 years	Country	24 years	—	—	60 for average strong men. Has known men of 70 at work	44½-50	9*d* since Nov., 1892	Very little
Picked up	—	—	6 years	Gas and hot-water engineer	—	—	53½	10½*d* when he was on a kind of task work system	—

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(31) Summer is busy time. As to overlapping, objection has been taken to him when fitting gaswork, hot-water stoves, &c.

(32) Had very regular work until present year, but is now unable to get employment. Has had only four months' work in twelve. Has worked as engineer and as watchman. Was apprenticed to the watch-making trade, but never followed it.

PERSONAL.

Occupation.	Age.	Birth-place.	Time in London.	Number in Family.	Number of Rooms. Occupied.	Rent.	If Teeto-taller.	If Trades' Unionist.	If member of Friendly Society.
(33) Mason's labourer	25 (about)	London	—	Wife, but no children	1	4/6	—	No	Benefit Club at Firm
(34) Scaffolder and labourer's foreman	49	Country	36 years	Wife and 4 children at home	2	5/6	Yes; for 27 years	No; but intends to join the General Builders' Labourers' Union	Phœnix
(35) Plasterer's labourer	—	London	—	Wife and 4 children	2	5/6	—	Yes; General Builders' Labourers' Union	Slate Club
(36) Scaffolder (mason's labourer for 15 years until 2 years ago)	—	—	—	—	3	5/-	—	Ditto	—
(37) Slater	68	Country	47 years	Wife—no children	2	5/	No	Was in Slater and Tilers' Union, but left because out of work	No

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(33) Slack in winter, if frosty; lost six weeks in 1891 from this cause. Otherwise he has had pretty regular work.

(35) He says "six months is a long job"; loses on an average one month a year *plus* holidays. Has worked alternately for gas and railway companies, at the docks, for vestries, and as a carman.

INDUSTRIAL.

How trade was learned.	Time in learning.	Where learned.	Time with present employer.	Description of employer.	How employment found.	Age limit.	Hours.	Rates.	Overtime (with rates).
Picked up	—	London	3 years	—	—	—	44½-50	6½*d*	Used to do a good deal, but very little now owe-ing to the overtime rates
Picked up as a boy	—	London	7 years (most of the time)	General builders and contractors	If in want of work, he would apply to foreman whom he knows. He has his address, and writes about jobs	—	—	7*d*	—
Picked up	—	London.	7 months	Master plasterer	—	—	44½-50	6½*d*	None
"By observation"	—	—	2 years	A London Vestry. Formerly building firm	—	—	47½-52½ until 1891. Longer on Vestry work	6½*d* in 1891. 6*d* on Vestry work, but gets a week's holiday, and Bank Holidays are paid for	Has occasionally worked overtime, but always at ordinary rates, *i.e.* no extra money
From father, who was a master slater	7 years	Country	Out of work	—	—	—	55½	9*d*, but mostly piece-work	Good deal. No overtime rates

Remarks as to Seasons, Shifting, Alternative Employment, Overlapping, &c.

(36) Shifting is very frequent owing to new labour-saving appliances. Thinks he lost six weeks a year when working for builders. Some find alternative employment in gasworks in winter, and some cart snow at 4*d* to 5½*d* an hour. (This man was a policeman for six years.)

(37) Busy season October to Christmas.

Apprenticeship and Methods of Training.—"I was not born, I growed," said Topsy in reply to a friendly inquiry as to her birthplace; and so the majority of younger workers in the building trade might reply, "I picked it up, I was not taught," in answer to the question as to how they acquired a knowledge of their trade. It is true that a considerable minority of those interviewed return themselves as having been "apprenticed," but they belonged, for the most part, to those who learnt their trade twenty or thirty years ago, and at the present time formal apprenticing is the exception, rather than the rule, in London.

For many reasons this is to be regretted, and many think that London employers are to blame for their unwillingness to take apprentices in the different branches of the building trade. But there are many obstacles in the way of the revival of the practice. The object of apprenticeship is to secure for the boy or youth the best practical initiation possible into his craft: he should be equipped during his term of apprenticeship with such an all-round knowledge as will enable him, after perhaps a very short period as an improver, to take his place as a competent worker in the ranks of his trade. But this is exactly what apprenticeship in London, under present conditions, would almost certainly fail to do. As already indicated, in most branches of the trade, London is an excellent finishing school, but a bad training ground, and it is so primarily because of the extent to which division of labour prevails. It would, of course, be possible for a lad to receive the very best training if employers and foremen would make this their special care. But the responsibility is rarely faced, and the large builders, the controllers, that is, of what might be the best schools, "won't be bothered" about training. Therefore, as things are, a lad, in London, would have difficulty in becoming apprenticed at all, and, if he succeeded, would

probably fail to obtain such a general insight into the trade as he would actually need and might reasonably expect to secure.

In London, moreover, it seems to be the case that, for a considerable number of years, the majority of operative builders have not endeavoured to place their children in their own trade, or at any rate in their own branch of it. The industrial field in London is so wide, the opportunities of securing clerical and other forms of employment are so various, that many fathers prefer to launch their sons on one or another of these lines, and by many the idea of apprenticing their boys in the building trade, as bricklayers for instance, would be scouted. It is true that the prejudice is tending to become weaker. The more firmly established position of the artisan, and the glut of labour in the clerical and other markets in which labour is not regarded as manual, are making men realize that an occupation that secures 9½*d* an hour is not to be despised, and that a common, coloured, dusty coat may after all be better than the formal broadcloth of the shop and the counting-house.

Among masons there are practically no apprentices in the big London yards. A full knowledge of the craft can rarely be learnt without a considerable amount of moving about, and most men who intend to master the difficulties of working the various kinds of stone, make it their business to travel. Bricklayers' apprentices are also only very occasionally found.

Among carpenters and joiners, apprenticeship of a more or less formal character is still the rule in the country, but it has almost died out in London. The common prejudice among the best firms against apprentices has a special explanation in this trade, in the fact that, partly through the extensive use of machinery, and partly from the character of most of the work executed, there is little left that is suitable for beginners to do. Wood is rarely

handled now in the rough. It is sent first to the machinists' room, and the processes that should occupy the beginner are no longer done by hand. Nevertheless it is said (and it comes as a complaint) that in inferior shops a large proportion of boys are found. They are, however, chiefly confined to finishing off machine work, doing sand-papering, cleaning up, mixing glue, &c., &c., and learn little. Learners in London, too, have less chance of acquiring the outside carpentering as well as the inside joinery work, and a complete grasp of the "general view," whatever form of specialization may follow later on, is essential to the really competent man.

Among plasterers the displacement of the "hawk-boy," whose business it was, some years ago, to serve the artisan with the material he was using, and the present substitution of the "tables" from which the material is taken as required, have eliminated the class from which the ranks of the plasterers were largely recruited, and to some extent explains the strong position occupied by this class during recent years. Apprenticeship is quite the exception.

Of painters a much larger proportion learn their trade in London, but, again, very few are apprenticed. Painters "of a sort" are easily made, and the lack of any standard of excellence is opposed to the revival of systematic training of beginners.

A notable exception as regards apprenticeship, is found in the case of plumbers. The apprenticeship system is general in this trade in many parts of the kingdom, and the ranks of the London plumber are largely recruited from those who have served an apprenticeship in the provinces. Such men become "mates" in some cases, and "improvers" in others, the "improvers" finding employment generally among the firms of plumbers and builders who do the best class of sanitary plumbing work, and who prefer plumbers who have been apprenticed in the provinces.

In a lower strata of the plumbers' trade the skill is

"picked up" by labourers working as "mates" with plumbers. A dominant influence in the training of plumbers is being exercised by the public demand for good work; and indications of this are seen in the efforts of the Plumbers' Company to secure good technical training; in their scheme of examinations and issue of certificates of registration, and in the Plumbers' Registration Bill now before Parliament. The action taken by the plumbers as a body is particularly notable as affording the only case—at any rate on a large scale—in which employers and employed have co-operated in promoting technical education in any trade. It is also the first instance in which any important body of artisans have, through their chief Trades Union Association, actively encouraged the technical education of apprentices and a system of practical examinations upon which to establish the public registration of qualified men. It must be remarked, however, that registration, while it may be a sufficient test of knowledge, can hardly guarantee that effective use of skill which is required in practice; rapidity in execution, and thoroughness in training, being alike essential. Practical plumbers have lately been trained as instructors, and it may be hoped that the missing link in the scheme of education in this trade will thus be supplied.

Of the 124 cases scheduled, 118 in all give particulars as regards the way in which the men learnt their trade, with the following result :—

	Apprenticed (with or without full Indentures.)	Taught by Father.	Picked up the knowledge.
1. Masons	3	2	—
2. Bricklayers	16	4	4
3. Carpenters and Joiners	26	4	1
4. Plasterers	1	7	4
5. Painters.....	4	3	6
6. Plumbers	1	4	1
7. Smiths and Fitters ...	2	—	2
8. Other branches.....	2	1	9
9. Labourers	—	2	9
All trades	55	27	36

Twenty-four carpenters and joiners show an average of five and a half years as the time taken for learning their trade; eighteen bricklayers an average of four and a half years; and four masons an average of five and a quarter years. In ninety-three of the above cases particulars have been given as to the locality in which the trade was learnt, showing:—

	London.	Provinces.
Apprenticed	26	30
Learnt from father	10	7
Picked up	17	3 (including 1 in America).
Total ...	53	40

Six out of the twenty-two bricklayers return themselves as having been apprenticed in the provinces—a small and probably somewhat misleading proportion; two out of the five masons; nineteen out of the twenty-nine carpenters and joiners; but only one painter out of eight, and no plumbers out of six. It must be noted that only eleven out of the fifty-two who, being apprenticed, give particulars of their place of birth, are under thirty years of age. If the above information had been obtained from a younger set of men, the proportion apprenticed would probably have been considerably smaller—certainly so as regards London. It must also be remarked that the term "apprenticeship" is ambiguous, and that in a considerable number of the above cases it means something of an informal, rather than a formal, character, probably often with neither indentures taken out nor premium paid.

To sum up. It seems probable that for some time to come the large majority of masons, bricklayers, carpenters and joiners, and, probably, plasterers, who work in London, will be found to have received their early training in the country. But with increasing facilities for technical instruction, and increasing willingness of parents to put their sons to some manual trade, the proportion trained in London in some fashion will probably tend to increase, and the future method

of their trade instruction is well worth consideration. Of systematic training in a single shop, such as would be ensured to an indentured apprentice, well placed, there will probably be but little, for the apprenticeship system would seem to be not only dormant but dead. The character of London work; the great amount of division of labour made possible by the extent of the London market; the unwillingness of the London employer to incur the trouble and responsibility of apprentices; the prejudice that is widely spread among artisans in favour of the more casual system of learning as improvers, with the freedom that is thus secured to move from shop to shop, as well as the power, to those smart enough, to earn early in life more than the nominal apprentice's wage; the constant training and improvement in intelligence of the ordinary labourer, and the consequent impossibility of restricting admission to the trade to those duly apprenticed—all these reasons militate against the revival of any general system of apprenticeship in the building trade in London.

The main substitute will be found in a more or less casual picking up of the knowledge of a trade, first by the lad and afterwards by the youth as an improver; and if a lad is smart the opportunities of obtaining the experience he needs are almost certain to come to him. Special assistance and instruction given by parents or relations, or it may be by friends or relatives, who are already qualified members of the trade, derive special importance when there is no apprenticing, and when, therefore, no responsibility is felt by the employer or foreman for giving instruction, and such friendly aid no doubt plays a considerable part in the schooling of the young.

But, evidently, casual workshop experience, however friendly the skilled men may be, can offer but a precarious and unscientific system of training. The need, therefore, of additional facilities for technical instruction is great.

Hours.—The length of the working day has been settled for the great majority of operative builders by the Agreement of 1892.* It will be seen that the hours for the whole year average about eight per day. The plumbers have for many years been able to secure exceptional treatment; and their working week averages just under forty-six hours for the whole year.

In seventy-five out of eighty-seven cases scheduled which give particulars of hours worked, the answer is "according to the Agreement." This is found to be practically the rule in all branches working on buildings, in joiners' and machinists' shops, and in stone-yards. Slaters and tilers have not yet fallen into line with the main body, their working week being fifty-six and a half hours. Marble polishers and marble masons seem to work a slightly longer week than that generally recognized, of from fifty to fifty-four hours. The hours worked by painters are the most various, a feature explained partly by the disorganized state of this trade, partly also by the somewhat lower rate of pay customary in it, and by its exceptionally seasonal character.

Out of twenty-two bricklayers, the only one who worked more than the hours of the Agreement was a man working for one of the Railway Companies. These companies rank as "private firms," *i.e.* as bodies doing only their own work,† and members of a trade union working for them are not subject to the conditions of the open market, it being understood, however, that any variations are to be

* *Vide* Addendum, page 169.

† This is the accepted definition of a "private firm." It may be noted, however, that it is not thereby differentiated from public bodies that eliminate the sub-contractor. The London County Council may certainly be described as "doing its own work;" but it is the last body that the trade unionist would be willing to see exempt from a strict application of trade union rules!

"First-hand" work, taken directly by the operative from the client, and executed by himself, is also exempt from trade union regulations.

reported to the branch. With this railway man the time was regularly fifty-four hours a week, and a weekly wage was paid.

A further very important influence on the actual length of the working day has resulted from the clause of the Agreement relating to overtime, the rules of which penalize excessive hours to such an extent that the systematic overtime of past years has been abolished, and the amount of overtime worked reduced to very small limits. "Very little since 1892," is the constant answer given to the question as to the extent to which overtime is worked; and the prejudice against it is widespread among operatives in nearly every branch. There are exceptional cases, the necessity of which is admitted; and the opinion expressed by a bricklayer that "any reasonable man knows that sometimes overtime must be worked, and is willing to do it"; and "it's right enough if the money is paid," would probably be endorsed by many in this, and in other branches of the trade. The exceptions are most frequent in repairing work and in renewals. In places of business where work is carried on during repairs,—*e.g.* in City offices—the inconvenience thus caused may be so serious as far to outweigh any additional expense incurred by hurrying on the work.*

Overtime work is also found not infrequently in machinists' shops, where expensive plant is used, and wages consequently enter less as an element in the expenses of production than in most branches of the trade. But here it is rarely excessive or systematic. The construction of buildings on expensive sites offers other instances where the item of interest on capital locked up is considerable, diminishing the relative importance of wages as an item of cost. But the feeling against overtime, coupled with the regulations

* This exception is most common n painting and white-washing. The painting trade, as organized, is under the Agreement, but overtime regulations are by no means generally enforced.

in force on the subject, make it a very exceptional thing to see the late working, often by artificial light, that was by no means an uncommon spectacle a few years ago.

The widespread feeling against overtime is a complex one, due partly to the belief, half true and half fallacious, that a demand slowly met makes employment more continuous, partly to the difficulty of enforcing overtime rates, partly to the more general desire for greater opportunities for leisure, recreation, and self-improvement; but chiefly to a partly altruistic feeling that the long day for those in employment, even though overtime rates be paid, is *unfair* towards those out of employment.

Since, however, demand for labour cannot be continuous, and because in some trades it is necessarily subject to periodical variations—seasonal or otherwise—undiscriminating opposition to overtime may, indirectly, do more harm than good; for a working day, of length varying within reasonable limits according to the necessary fluctuations in demand, tends to diminish the number of those casually employed in any given trade.*

Although a working day of a uniform and moderate length has been secured for the main body of operative builders, some allowance must be made in London, for time consumed in travelling to and from work. Many operatives, it is true, such as joiners, machinists, or masons working

* Thus, if a thousand men can meet the usual demand in any given trade, and there is, from permanent and necessary causes, only six hours' work each day for three months in the year, and ten hours' each day for two other months, it would be better to allow those thousand men to work ten hours than to forbid them to work more than eight hours. For if we assume that the work must be done, and the thousand are forbidden to do it, it will be necessary to employ some 250 extra men during the busy time. But these 250 are only casually employed, and it would probably be better in the long run, if it were impossible for them to be the hangers-on of a trade in which they cannot hope to earn regular and decent wages. The variations are more complicated in actual life, but the argument is not weakened because its application may not always be easy to trace.

at a stoneyard in regular employment, may be fortunate enough to live near their work. But from the nature of the case the locality of their employment, for a large proportion of the men, is constantly shifting, and a considerable amount of time, which it is difficult to estimate, but which must frequently exceed one hour morning and evening, has in many cases to be added to the length of the working day on this account.

Piece-work.—This method of payment is by no means unknown in the building trade, though payment by the hour is the general rule. The piece worker, *i.e.* the man who is remunerated by scale according to the work actually executed, must however be distinguished from the piece master, who, as a sub-contractor, takes work at a price and employs others to execute it, or to help in executing it.

The prevalent opinion of the men is strongly opposed to piece-work in any shape or form, and the usual objections are urged, viz. that it results in bad workmanship, and in undue pressure, and, moreover, makes it difficult, if not impossible, to maintain a uniform system of remuneration. No one is theoretically in favour of bad workmanship, but the other points are, as usual, met directly. Time-wages, it is asserted, do not afford pressure enough, and lead, in the case of unconscientious workmen, to indifference, idleness, and shirking. It is also urged that it is distinctly undesirable that remuneration should take no account of differences in individual efficiency and energy. And there the dispute rests. It may, however, be argued further that the enervating effects of a uniform time-rate give special opportunity for the introduction of the piece master and of the "bell horse," and that the functions of the foreman, of the leading hand, and of superintendence generally, derive additional and excessive importance. Practical difficulties in the way of satisfactorily regulating a system of piece-work, acting on the side of the men, have led very widely to its discontinuance. Where this is not so, as for instance

in some branches of speculative building and suburban work generally, the practice, though discontinued and even forbidden in the best organized trades, is not eliminated. But even in these cases the piece master, who pays his men a time-wage, is more common than the individual piece worker. Payment by piece being discountenanced is, however, liable to be concealed, and may be more prevalent than it is easy to discover. Acknowledged instances of piece-work are chiefly connected with specialities, as patent flooring and school furniture amongst carpenters and joiners; and figure carving among masons; whilst large jobs of white-washing are undertaken at so much a square yard by specialists, who are able to do the work more quickly and cheaply than could ordinary painters or labourers.

Shifting.—Most trades and employments are carried on under a belief that the community will need in the future what it has required in the past, and that what the individual has supplied he may safely continue to supply; for it is no less true industrially than in religion that "men live by faith." But when clearly realized, which as a rule it probably is not, the uncertainty of tenure becomes almost startling. Thus, one hour's notice on either side is the legal tenure of employment in the building trades, and work is essentially discontinuous in character. True, it is not liable to such violent fluctuations as ship-building or the iron trades generally, or any industry that is dependent on a world-wide range of markets, the volume of the building trade depending on a local demand, and thus being comparatively constant from year to year. It is the last to feel depression and the last also to recover when the wave of general depression has passed by. But for the individual employee there are special causes which lead to discontinuity: (1) the system of tenders and contracts by which the amount of work in the hands of any particular firm is liable to great changes in amount from month to

month; and the parallel system by which large numbers of men are taken on for one job and discharged when it is finished; (2) the seasonal character of the trade and the effect of the weather.

The foremen who take on the men have (as we have seen) their lists of those previously employed and found satisfactory, to whom they give the preference when new work offers. It is not unusual even, in the case of an inner circle of leading hands, for the foremen to write and find out if the men are free; and when a big contract is in question which will afford certain employment for many months, there may be voluntary shifting of men not yet out of employment. It is a common practice for men to follow up foremen they know; and the value of this form of trade connection to steady workmen is very great. In some jobbing firms the principals engage their own men without the intervention of the foremen. This is done with the object of having always a reliable staff of men, and has an important influence on the regularity of their employment; for the firm can, and does, move the men from one piece of work to another in a way that is impossible when each foreman engages his own assistants and necessarily dismisses them at the end of a job. In such ways is found some modification of a system which otherwise seems relentless; but to many, perhaps to most of the men employed, these mitigations hardly apply, in spite of the fact that every argument, whether from the point of view of the employer or of the employed, is on the side of securing the greatest degree of regularity compatible with the conditions of the trade. These conditions, unfortunately, are not favourable.

It is impossible to form any exact idea either of the extent to which the volume of trade changes from year to year, or of the vicissitudes of the individual worker—the latter varying with the character of the man as well as that of the firms for whom he works.

Of the eighty-one scheduled cases in which particulars are given as to length of time the men had, at the date of our interview, been working for the same firm, we find eleven had been engaged less than one month, ten for more than one and less than three months, and eighteen for more than three but less than twelve months. Thus nearly half had been employed less than one year by the same firm. Those who had been in the same situation for more than one and less than three years numbered eighteen, those from three to ten years seventeen, and above ten years there were only seven men. It may be supposed, moreover, that the men of our interviews would be far above the average in this respect. Many of the answers illustrate the common practice of returning repeatedly to the same firm: several state that they had worked for the same firm for periods varying from three to twenty-five years, "on and off." One interesting return from a carpenter, who was rarely out of work, showed no less than seventy-nine changes of employer in thirty-two years; so that the average duration of each engagement would amount to only four and a half months. In the whole period he had worked for fifty-three different employers. By one firm he was employed on ten occasions, by three firms on three occasions, by eleven on two occasions, and by the rest only once. This remarkable amount of shifting was not caused by incompetence, for the man was an excellent and trustworthy worker, and the periods during which he was out of work were few and far between; the only long spell, except during the strike of 1891, being due to an accident which incapacitated him for several months. When in health, the longest breaks shown during the whole thirty-two years are one of six weeks and six others of periods varying from fourteen to twenty days; and of these some doubtless may be regarded rather as holidays than as periods out of employment. As

a rule, he began work again on the second or third day after a change of firm.

How Employment is found.—In a trade in which employment is so discontinuous, the methods by which fresh berths are found deserve some notice; and perhaps the first impression given on considering this point is the absence of method. The saying of one operative that "a good man who is 'in the know' can always get work," though it goes too far, has much of truth in it. Through foremen, through friends, through the branch meeting, or through the chat of the dinner-hour, the news of vacancies and of new work spreads rapidly and widely through the ranks of the trade.

The voluntary shifting of men has already been noticed; and the motives that lead to it, such as the approaching close of one job and the opening up of another that promises to offer at least a longer spell of work; or perhaps a chance of work in a favourite shop, or under a popular foreman, or nearer home; or, again, the desire for new and useful experience —all these are powerful influences, and remind us that all change of employment is not compulsory, and that it is often made by the operative in the exercise of his own free judgment and will. A new place, therefore, has not necessarily been preceded by want of work. Often, however, and perhaps generally, it is otherwise, and the following more special ways by which employment is found may be enumerated.

The first is roughly expressed as "looking round," and perhaps this is the most important. Although apparently casual, the search will often be conducted with some method. The applicant might hear, for instance, of a particular contract to be entered into by such and such a firm, or of a foreman known to him who had just been put on such and such a job; but the general search, unenlightened by any special knowledge of contract, foreman, or "pal," is the more common practice. The whole of London, and the provinces

too, for that matter, are his sphere of potential employment. The "world is his oyster," and, as the shell seems to open here and there—a new hoarding, a chance notice, or what not, may be his indicator—he offers himself, sword, or rather tools, in hand, to see if perchance he may secure the prize he seeks. No character is asked or given; if there is a vacancy, and he can satisfy the foreman who is taking men on that he knows his trade, the out-of-work gets employment, and retains or loses his job, according to the degree of competency that he can show. If the hirer should make a mistake, the hour's notice is his remedy.

The practice of "following up" foremen who are known has been already mentioned. The importance of knowing a certain number of foremen is one of the reasons that makes men anxious to have the experience that is gained by occasional movement from firm to firm.

The help of friends is important. These often hear of vacancies that are occurring, and of chances that offer, and pass on the knowledge to those out of employment. There is much *camaraderie* that helps, in an irregular and unorganized way, to show a man who is in need of it the way to a berth. The offices of the branches of the trade society also are houses of call which play the part of trade labour bureaus; and their existence largely explains the small number of trades unionists who use the public bureaus that are opened from time to time in the winter. Those needing work sign the unemployed book, and information is often forthcoming at the branch meetings as to where work is being offered; while, on the other hand, the foreman frequently uses the branch when in need of men.

It is rare for an operative working in the rank and file of his trade to advertise for employment; and the Press generally, including even the trade journals, is of little importance to the artisan in this way. On the other hand, a considerable amount of useful knowledge in regard to the

general conditions of employment is now available through these journals; and much more detailed local information is given in some of the circulars issued by the societies for particular trades, by the *Building Trades' News*, and by the *Labour Gazette*.

Busy and Slack Seasons. — The building trade is universally classed as "seasonal," the weather and the temperature being regarded as the dominant influences affecting the demand for labour. This is for the most part true. It is, however, important to note that these influences affect different branches of the trade in very different degrees, and that there are other proximate causes, chiefly social and commercial, which have disturbing effects not less powerful. In considering seasonal variations different classes of work must be kept in mind, such as work on new buildings, and work on old, occupied or unoccupied; work that is exposed to the weather, and work done under shelter, &c. The effect of the weather on new, exposed brick-work is most commonly observed and considered, and rightly, in so far as bricklaying provides the structural basis of all the rest. If it is stopped for any length of time, as for instance by continuous frost,* other sections, such as the carpenters, not themselves directly affected, must stop work also. But in some departments the work is in great measure independent of the influence of the weather on that particular branch. This is especially true of repairing work.

With regard to new work, we find that bricklayers, masons (as fixers), plasterers and painters are most affected by changes of temperature, the employment of the last two being also largely influenced by damp and wet, as well as by frost. Labourers, as auxiliaries to the skilled trades, are necessarily subject to the same influences: as excavators

* It is said that with care in the preparation of the mortar and materials used a moderate degree of frost presents no insuperable difficulties. *See* memorandum by H.M. Consul-General at Christiania, printed in Laxton's "Builders' Price Book," 1894, page 37.

they are completely stopped by severe frost; while, as scaffolders, on the other hand, they are not directly affected. They gain little, however, from this, as, even though they may be uninterrupted by frost, if they get ahead of the other sections employed they are liable to be stopped in their turn, even though the weather may be in every way favourable.

So far as the masons' work consists in the preparation of stone, it is not seriously interfered with by frost, although some descriptions of stone are more affected by it than others. It is stated that the marble mason is entirely unaffected by the weather, and that this, coupled with the fact that he always works under cover, constitutes a special attraction possessed by this branch of the trade.

Slaters are slackest in mid-winter, not so much because their work is greatly affected by the weather, as because of the importance of getting buildings covered in before the frost comes; for when the roof is once on floor-laying, plumbing, fitting, plastering, and other branches can be executed in comparative independence of the weather. Tilers, on the other hand, from the use of mortar in fixing the tiles, are more subject to climatic influences.

If the building is ready for them, carpenters are independent of the weather, and joiners are so in any case. Both, however, as has been indicated, are ultimately subject to the same influences as the bricklayer. Only they tend to be affected at a somewhat later stage, and in an indirect way.

Plasterers are badly off, since frost stops them and damp delays them; and painters suffer in the same way. Machinists, plumbers, glaziers, paperhangers, smiths, and fitters are comparatively unaffected by the seasons. Plumbers and fitters indeed gain employment, in any case at its close, from the same frost that may bring hardship to other branches of the trade.

When we consider the variations in the demand for employment in that large branch of the trade engaged in

repairs and renewals, we find that it is subject to quite another class of influences. These may be generally described as due to the necessity of giving the least possible degree of inconvenience to occupiers. It follows that a large section of builders tend to be busiest when other people are slackest. All occupiers alike desire to secure the services of the builder when dwelling-house or office or warehouse is least in demand for its normal uses. Tradesmen and householders, each for their own particular reasons, get the builders in during the period of preparation for their busy times. The following table of wages paid by a firm of West End jobbing builders, whose trade is largely regulated by social conventions, illustrates the effect of the London season upon employment. The table gives a summary of the wages paid during one year.

Monthly Summary of Wages paid by a London Builder for one year.

Date.	Average Weekly Wage for the month. £	s.	d.
September	98	0	0
October	93	0	0
November	93	0	0
December	87	0	0
January	89	0	0
February	90	0	0
March	96	0	0
April	128	0	0
May	142	0	0
June	107	0	0
July	120	0	0
August	173	0	0
	£1316	0	0

(Average weekly wage £109.)

Probably those most affected by "social" as distinguished from seasonal causes of the atmospheric kind are painters, decorators, whitewashers, &c. The pressure put upon these men during holidays is notorious; and

it is not an uncommon thing for the Easter and Christmas holidays to become times of the severest strain for a large number of operatives. Contracts are frequently undertaken at these periods, necessitating work almost day and night, and the eight hours' day is brushed rudely on one side. The convenience of having work done in this way during holidays is doubtless great. These times, however, are apt to become periods of such excessive hours of work and severe physical exertion, that the drawbacks to the individual workman, in spite of the large earnings of the moment, are very serious; and the worst results of irregular employment are almost inevitable.

Much has been heard of late of the power of the London School Board and of public boards in general, to help in securing equality of demand throughout the year; and doubtless something may be done in this direction. It would probably be well if this were effected, even at some slight apparent sacrifice of economy. But it is essential that steps of this kind should be taken with a clear recognition of the real effects of such a policy, and not with the belief that it is adopted in the interests of the more necessitous cases of the unemployed. By hypothesis, the work is to be done at slack times; that is, when many competent men are out of work. These, and not the less competent, will obtain it. And not only will the latter have no chance whatever of securing the work that in a somewhat artificial way is being done during the slack season, but their chance of getting employment when the normally busy time comes round will be diminished by exactly the amount of work that has been forestalled in the slack times. The result must undoubtedly be good, as any change must be that tends to secure greater regularity of employment for those actually obtaining their livelihood in any trade. But it is not to be forgotten that the community and the particular trade will gain at the expense of the more permanent displacement of the inferior

workman, whose chance of just getting along will become small, and who will tend to be driven into other fields of employment. The London School Board and the London County Council, and all other employers who make it their special care to regulate the demand for employment in the above way, will act for the general welfare; but they will do this by strengthening the position of the better class of workman; while they will hurt and perhaps destroy weaker individuals who may be ousted from their old field of employment. Others may have to bear the burden of these lives; but the community will still be the gainer.

The following tables illustrate the fluctuations in the demand for employment in this group of trades. No figures can set forth the complexity of the causes that produce these fluctuations; but the main determining cause is, as has been stated, seasonal in character. The figures show a typical slack week, but the extent to which this slackness prevails cannot be indicated. Much less can we get any measure of the chance of employment of the members of particular trades. Thirteen firms have given particulars of the earnings of their employees in busy and slack weeks respectively, and the following table has been compiled from their returns:—

Building Trades.

Comparison of the Number and Earnings of the Men and Boys employed in busy and slack weeks respectively.

	Number of Men.			Average Earnings.			Dates of Busy and Slack Weeks.	
	Busy Week.	Slack Week.	Reduction.	Busy Week.	Slack Week.	Reduction.	Busy.	Slack.
Thirteen firms.	1353	660	51 %	33/7½	31/3	7 %	May, June, July, Aug., Oct., Dec.	Nov., Dec., Jan., Feb., March.

The decreased earnings reflect, approximately, the shorter hours that are worked during the winter months, in which period the slack weeks always fall. Mid-winter, with shorter hours, and consequently smaller earnings, for most sections of the trade, presses, of course, with greatest severity upon the outdoor workers. This is illustrated by the following statement comparing bricklayers with carpenters and joiners :—

	Number of Men.			Earnings.		
	Busy.	Slack.	Reduction.	Busy.	Slack.	Reduction.
Bricklayers ...	121	37	69½ %	39/8	37/2½	6 %
Carpenters ...	325	166	49 ,,	37/5	34/4	8 ,,

The above tables must not be interpreted to mean that during December and January, or still less during November, February, and March, 50 per cent. of the building operatives are out of employment. For two or three weeks in each winter as large a proportion as this may be so; and in some years, when the trade as a whole is slack, and the conditions of weather are very unpropitious, as many may be out of work for a longer period. But, although the tables do not give particulars that will enable us to give a time-measurement of fluctuations in employment, they illustrate very significantly the presence of great and disturbing variations.

Rates of Wages.—During the last quarter of a century many changes have occurred in the rates of remuneration of the operative builders in London. Piece-work has been largely discontinued, overtime has been to a great extent abolished, and the hourly rate has risen from 8*d* to 9½*d* in the majority of the skilled branches of the trade. During the same period the length of the average week has diminished from fifty-six and a half to forty-eight hours. In 1868,

however, when the working week was fifty-six and a half hours and the rate 8*d*, the normal weekly earnings, for example, of a carpenter or joiner, were £1. 17*s* 8*d*. In 1893, with a week of forty-eight hours, and a 9½*d* rate, the normal earnings stand at £1. 18*s*, or a difference of 4*d* only of nominal value. The difference in *real* value is undoubtedly much greater, purchasing power, except in the case of house-rent, having greatly increased during the above period.

A complete account of variations in the normal weekly wages is, however, beyond our province, and still less an analysis of the meanings of those variations as measured in real purchasing power. It is our business rather to consider (1) the normal rates at the present time in the main branches of the trade, and (2) the average weekly earnings, in as far as these can be given, of the representative sections of the group.

The schedule of wages accepted by the London County Council, and based on the rates "recognized and in practise obtained by the various trades unions in London," is as follows :—

Building Trades.	Rate of pay per hour. *d.*	Building Trades.	Rate of pay per hour. *d.*
Carpenters	9½	Scaffolders	7
Joiners	9½	Paviors	9
Bricklayers	9½	Slaters	9
Do. (cutting and setting gauged work)	10½	Hot-water engineers	9½
Plasterers	9½	Zinc workers	9½
Masons	9½	Gasfitters	9½
Do (fixing)	10¼	Bellhangers	9½
Do. (granite-work)	10¼	Paperhangers	9
Painters and glaziers	8½	Plumbers' mates	6½
Smiths, fitters, &c.	8½ to 9½	Painters' labourers	6½
Labourers and navvies	6½	French polishers	8
Plumbers	10½	Steam-sawyers	9½
Timber-men	7 to 7½	Machinists (Joiners)	10½

The figures of the above schedule need little comment, as they represent on the whole the recognized practice of

the trade in London. A considerable number of men are undoubtedly paid at lower rates than the above, the chief exceptions being the handy man working for small employers, the adult improver in many branches who offers himself for less than trade union rates, and the painter who is unable to secure them. It is improbable, too, that the majority of the machinists obtain $10\frac{1}{2}d$ an hour; but, on the other hand, many men secure higher rates than those scheduled.

Variations from the normal rates are largely due to special skill or reliability. Thus joiners not infrequently earn $10d$ and $10\frac{1}{2}d$, and while the "brush hand" among painters may be able to secure only $7\frac{1}{2}d$, the skilled decorator will be earning $10\frac{1}{2}d$ or $11d$ an hour. Regarding the trade as a whole, however, it may be said that the wages question derives its importance, not so much from variation in the rates at which labour is remunerated, since these on the whole are fairly uniform, as from the conditions under which the work is done and the regularity with which employment can be secured.

The following tables will throw further light upon the question of remuneration in this group. They include returns from 39 firms employing 4406 men and boys, together with particulars as to 1010 more who were included in returns from other trades:—

Engineers and contractors	9	39 Firms.
Builders	21	
Decorators	2	
Tile and slate merchants	2	
Stone and marble masons	3	
Window-blind and reflector makers	2	

It will be observed from Table I. that the bulk of the labourers are able to earn for a full week's work from $25s$ to $30s$, while the majority of the skilled men earn between $35s$ and $40s$, nearly 60 per cent. falling within one or another of these two limits. With the exception of a certain number of improvers and painters, only a

small proportion of those for whom particulars have been given are earning less than the rates detailed in the L.C.C. schedule. The deviation from the full week's rate is partly explained by the inclusion in the employers' returns of those working for a short week. The 20 per cent. who earn over 40*s* would be to a considerable extent due to the additional ½*d* or 1*d* per hour that is paid to the leading hand.

I.—Weekly earnings of men employed in Building Trades. (Sections 2 to 9.)

Under 20*s*	104, or	2½ per cent.		Under 30*s*, 40 per cent.
20*s* to 25*s*	418 ,,	8 ,,		
25*s* ,, 30*s*	1488 ,,	29½ ,,		
30*s* ,, 35*s*	575 ,,	11 ,,		30*s* and over, 60 per cent.
35*s* ,, 40*s*	1454 ,,	29 ,,		
40*s* ,, 45*s*	807 ,,	16 ,,		
45*s* and over.....	220 ,,	4 ,,		
	5066 ,,	100 ,,		

II.—Weekly earnings of *Masons*. (Section 3.) Adult males.

Under 20*s*	1, or	½ per cent.		Under 30*s*, 27½ per cent.
20*s* to 25*s*	3 ,,	1½ ,,		
25*s* ,, 30*s*	54 ,,	25½ ,,		
30*s* ,, 35*s*	16 ,,	7½ ,,		30*s* and over, 72½ per cent.
35*s* ,, 40*s*	52 ,,	24½ ,,		
40*s* ,, 45*s*	80 ,,	38 ,,		
45*s* and over.....	5 ,,	2½ ,,		
	211 ,,	100 ,,		

III.—Weekly earnings of *Bricklayers*. (Section 6.) Adult males.

Under 20*s*	8, or	3 per cent.		Under 30*s*, 30½ per cent.
20*s* to 25*s*	25 ,,	10 ,,		
25*s* ,, 30*s*	44 ,,	17½ ,,		
30*s* ,, 35*s*	20 ,,	8 ,,		30*s* and over, 69½ per cent.
35*s* ,, 40*s*	67 ,,	27 ,,		
40*s* ,, 45*s*	66 ,,	26½ ,,		
45*s* and over.....	20 ,,	8 ,,		
	250 ,,	100 ,,		

IV.—Weekly earnings of *Carpenters*. (Section 7.) Adult males.

Under 20*s*	22, or	2½ per cent.		Under 30*s*, 20½ per cent.
20*s* to 25*s*	65 ,,	8 ,,		
25*s* ,, 30*s*	81 ,,	10 ,,		
30*s* ,, 35*s*	165 ,,	20 ,,		30*s* and over, 79½ per cent.
35*s* ,, 40*s*	293 ,,	35½ ,,		
40*s* ,, 45*s*	155 ,,	19 ,,		
45*s* and over ...	44 ,,	5 ,,		
	825 ,,	100 ,,		

V.—Weekly earnings of *Painters* and *Glaziers*. (Section 9.) Adult males.

Under 20*s*	7, or	2 per cent.		Under 30*s*, 44 per cent.
20*s* to 25*s* 57	,,	17 ,,		
25*s* ,, 30*s* 85	,,	25 ,,		
30*s* ,, 35*s* 87	,,	25½ ,,		30*s* and over, 56 per cent.
35*s* ,, 40*s* 64	,,	19 ,,		
40*s* ,, 45*s* 26	,,	7½ ,,		
45*s* and over.....14	,,	4 ,,		
340	,,	100 ,,		

Average Earnings.—The interest of several of the preceding sections—for instance, those relating to shifting, methods of finding employment, seasonal variation, &c.—turns largely upon their bearing on the yearly income of the individual wage-earner; and the importance of securing exact information on this point cannot well be exaggerated. In few trades is the question of remuneration answered when we are told what is the rate of earnings for a normal week. The important thing to know is, for how many normal weeks during the year is employment, on the average, secured. It may be noted that the corresponding question of "unemployment" is frequently discussed without reference to this point. Employment and unemployment alike tend to be discontinuous, and the classes of employed and unemployed are therefore in no sense fixed quantities. By

regarding them as such we are apt to exaggerate the earnings of the former and the character of the problem presented by the latter.

Local conditions have also to be considered when estimating the real value of remuneration. In London, for instance, it is necessary to remember that, although rates of pay are higher than in provincial towns, it is in many cases doubtful whether their *real* value is so or not, and the opinion is held by many that the position of the building operatives in London is, if not inferior, certainly not superior to that held by many of their fellow-craftsmen working in the country at a lower nominal wage.

There are two chief explanations of this, (1) higher rents, and (2) heavy travelling expenses. On the latter point, one man reports, "For the last six years, 2*s* to 2*s* 6*d* a week;" another says, "Now 1*s*, and walk two miles each way besides;" a third states, "Once living at Stratford and working for a firm at Notting Hill; cost me 3*s* a week;" and a fourth puts his expenses at "1*s* a week." Many, of course, especially of those employed in the shop or yard, work within easy walking distances of their homes, but London is so large and employment so discontinuous that the chance of having an appreciable sum to pay each week for travelling is considerable, and cannot be avoided by a large number of men.

These are matters which make London a more than ordinarily expensive place to live in. On the other hand may be mentioned the unequalled opportunities that it offers to the careful provider of securing at low rates every article consumed, worn, or used in the home.

The force of competition among distributors of all classes tends to reduce prices to their lowest possible level, and although bad management, unwise use of credit, buying in small quantities, and such causes, may lead to the misuse of the facilities for cheap living provided, the fact remains

that London, although it may be the dearest, may also be one of the cheapest places in the world to live in, apart from the items of rent and travelling. In practice these advantages are, however, balanced to a great extent by the unequalled opportunities which London offers to those who are inclined to be extravagant, or not so very careful.

Remembering these points, we may proceed with our endeavour to answer the question: What are the average wages earned by operative builders? For this part of the inquiry it is easy, as has been seen, to secure particulars as regards rates of pay and as regards the earnings for a single week, and it has also been possible to secure estimates more or less reliable of yearly averages. In this connection, however, the actual records of individual cases for considerable periods have an especial value, and of these it has been our good fortune to secure a considerable number.

The following are among the most reliable and significant that have been collected. The figures given are the total annual earnings.*

1. A bricklayer—from 1877 to 1886: £90, £83, £83, £91, £87, £84, £97, £101, £91, £90. From 1888 to 1891: £80, £87, £89, £91; averaging for the 14 years, £88. 17*s*, or per week, 34*s*.
2. A bricklayer—from 1879 to 1884: £71, £72, £70, £87, £95, £85; averaging for the 6 years, £80, or per week, 31*s*.
3. A bricklayer—from 1882 to 1892: £99, £103, £96, £96, £91, £80, £85, £98, £85, £95, £91; averaging for the 11 years, £92. 12*s* 6*d*, or per week, 35*s* 6*d*.
4. A mason—from 1888 to 1892: £78, £93, £102, £86, £91; averaging for the 5 years, £90, or per week, 35*s*.
5. A joiner—from 1882 to 1890 at the rate of £92. In 1891 (strike year), £69. In 1892, £114; averaging for the 11 years, £91. 18*s*, or per week, 35*s* 6*d*.

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* Amounts of less than 10*s* showing in the totals have been ignored; 10*s* and upwards has been reckoned as £1. Thus £83. 9*s* 6*d* has been taken as £83, £83. 10*s* 6*d* as £84.

6. A joiner—from 1886 to 1892: £87, £100, £92, £85, £91, £74 (strike year), £87; averaging for the 7 years, £88, or per week, 33*s* 6*d*.

7. A carpenter—from 1884 to 1892: £101, £119, £99, £106, £101, £100, £82, £92, £97; averaging for the 9 years, £99. 13*s* 6*d*, or per week, 38*s* 6*d*.

8. Carpenter and joiner—from 1884 to 1892: £98, £88, £95, £100, £96, £97, £91, £99, £99; averaging for the 9 years, £95. 18*s*, or per week, 37*s*.

9. A painter—from 1884 to 1889: £66, £74, £63, £90, £82, £75; averaging for the 6 years, £75, or per week, 29*s*.

10. A scaffolder—for 1891 and 1892, £83 and £74; averaging for the 2 years, £78. 10*s*, or per week, 30*s*.

11. A labourer—for 1891 and 1892, £36 and £35; averaging for the 2 years, £65. 10*s*, or per week, 25*s*.

The above figures include only actual trade earnings, and omit any subsidiary incomings, club benefits being the most important of these for which particulars are given.

Many of the returns would well repay the trouble of a closer analysis and a fuller presentment. In several cases a considerable amount of information is given as regards changes of employer, character of the work executed, and the vicissitudes from sickness, loss of work, &c., &c., of the individual man. Some of the chapters of the industrial biography of these unnamed men who, as statistical figures, flit vaguely before our imaginations might well be made the subjects of a monograph, which should bring out, not only the economic, but the human significance of the figures given.

In addition to the annual variation, which is in some cases considerable, a seasonal fluctuation is also noticeable, the weekly averages for the second and third quarters of the years exceeding in the very great majority of cases those of the first and last quarters. The following may be taken as samples. The case of a plumber, from whom particulars for one year only have been received, has been added:—

WEEKLY AVERAGES (TO THE NEAREST SIXPENCE).

		First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Year.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d
Bricklayer 1	(1890) ...	1 2 6	1 18 0	1 19 0	1 13 0	1 14 0
,, 2	(1890) ...	1 7 6	1 16 6	1 18 0	1 9 0	1 13 0
Carpenter	(1890) ...	0 15 6	1 14 0	1 19 0	1 16 6	1 11 6
,,	(1887) ...	1 7 6	2 0 6	2 9 6	2 5 6	2 1 0
Painter 1	(1887) ...	0 19 6	1 14 0	1 17 0	1 16 6	1 11 6
,,	(1888) ...	0 17 0	1 15 6	1 8 6	1 15 0	1 9 0
,, 2	(1886) ...	1 7 0	1 19 6	1 16 0	0 11 0	1 8 6
Plumber	(1890) ...	1 19 0	1 15 0	2 7 0	2 1 0	2 0 6
Scaffolder	(1891) ...	1 14 0	1 13 6	1 12 0	1 8 6	1 12 0
,,	(1892) ...	1 8 6	1 8 6	1 9 6	1 8 0	1 8 6
Labourer	(1892) ...	1 0 6	1 6 6	1 8 0	1 6 0	1 5 6
		13 18 6	19 1 6	20 3 6	17 10 0	17 15 0
Average ...	...	£1 5 4	1 14 6	1 16 6	1 12 0	1 12 3

Such are the figures shown by exact records of individual earnings. They give, doubtlessly, averages that are higher than those earned by the rank and file of their various trades, for those who take the trouble and have the courage to keep accounts are generally those who are exceptionally steady, and perhaps exceptionally successful. An allowance, therefore, must be made when we consider them as indicative of general conditions. But they will be of considerable value when shown in relation to certain estimates which have been given us, and to the figures given on pages 123-4.

The estimates that have been obtained which are worth quoting are as follows:—

Sixteen cases of bricklayers, masons, and plasterers, varying from 26*s* to 38*s* 9*d*, show an average of 31*s* 6*d*.

Thirteen cases of carpenters, joiners, and machinists, varying from 24*s* to 39*s*, show an average of 32*s* 8*d*.

Three cases of painters (working at not less than $8\frac{1}{2}$*d* per hour), varying between 27*s* 6*d* and 30*s*, show an average of 29*s* 2*d*.

Four cases of scaffolders and labourers, varying between 17*s* and 31*s*, show an average of 23*s* 3*d*.

The following table will summarize, as regards the more important branches of the trade, the result of the particulars given on the preceding pages; columns Nos. 1 and 2 give particulars referring to single weeks, Nos. 3 and 4 to longer periods—never for less than one year:—

	For 48 hours' work.	Including overtime (if any).			
	Normal wages.	Average shown by our returns for one week (v. p. 123).		Averages of specific cases (p. 126).	Averages of estimates (p. 128).
			£ s. d.	£ s. d.	£ s. d.
Masons.....	*at 9½d per hour.* £1. 18*s*.	Masons	1 16 4	1 13 10	1 11 6
Bricklayers ...		Bricklayers	1 15 2		
Plasterers ...		—			
Carpenters ...	*at 9½d per hour.* £1. 18*s*.	C. and J.	1 15 2	1 16 1	1 12 8
Joiners.....					
Machinists ...					
Painters	*at 8½d per hour.* £1. 14*s*.	Painters	1 11 6	1 9 0	1 9 2
Scaffolders & Labourers	*at 7d per hour.* * £1. 8*s*.	—		1 7 6	1 3 3

Putting on one side the exceptionally capable or exceptionally trustworthy man on the one hand, and the more shiftless and incompetent on the other, we shall probably be not far wrong if we consider the figures given in the fourth column of the above table as a fairly accurate statement of the actual average weekly earnings, under normal conditions, in the trades mentioned. The average for the masons should probably be put at a somewhat higher figure than that for the bricklayers, as, in spite of the amount of dressed stone sent up from the quarries, some two-thirds of the former probably work under shelter in London, and thus in greater independence of the weather, whilst those employed as fixers receive 10¼*d* instead of 9½*d* per hour. It is important also to remember that the particulars as regards painters have reference to the average skilled man who

* Scaffolders 7*d* and labourers 6½*d*.

earns not less than $8\frac{1}{2}d$ an hour. As has been stated, there is much intermittent following up of this craft by the semi-skilled, and, if the average earnings of these could be included, a very considerably lower sum would doubtless be shown. But estimates of these cannot usefully be given.

Plumbers do not earn more, on an average, than carpenters and joiners, in spite of their slightly higher rate of pay, while smiths and fitters, and slaters and tilers, on time-rate, may be safely put at from 5 to 10 per cent. lower than the rates given for bricklayers. There is no reason to suppose that the average for any other section, such as the fibrous plaster workers, marble polishers, tesselated tile workers, &c., would not correspond generally with the above rates, due allowance being made, when necessary, for any difference that there may be in the recognized rates of pay in the various sections.

Alternative Employment.—In no branch of the trade is there any recognized form of alternative employment in the not infrequent out of work periods, except perhaps the movement of a certain number of labourers to the gasworks in the winter. "To nothing else except in cases of sheer necessity, and then to anything" is the answer of one man to the question as to what he would turn his hand during slack times in his own trade, and the answer roughly illustrates the general practice. Thus, although the joiner out of work might possibly do some cabinet-making, and the machinist who had gone through his training as a carpenter and joiner some rough carpentering, and though the smith might tend to find his way to the fitting or engineering shop, such transitions in the slack time are the exception in the skilled trades. Even competent painters rarely take up other work, save in especially bad seasons, and, speaking generally, movement from one branch to another is becoming more exceptional with the completer specialization of modern times. As previously stated, the

movement of the labourers to other occupations is much more common, and, in addition to the gasworks already mentioned, railway, vestry, or carmen's work, hawking, and jobs on the ice are mentioned as channels of absorption when building is slack.

More important than the movement to another occupation either inside or outside the group, when out of employment, is the power of the members of many branches of the trade to obtain work on their own account. The mason and the plasterer are perhaps the worst off in this respect, but the bricklayer is always a handy man who can do a job for a neighbour, while the painter, if there were not so many of his craft, might hope to be constantly in request, since "painting is a thing all houses want, the same as a man wants trousers"; and the "carpenter's little bench in his back kitchen" is frequently found, and, put to other than domestic uses, it often becomes a source of income. But such supplementary forms of remuneration, although doubtless having a considerable effect on average earnings in individual cases, are not likely to have an important general influence. In any case it is difficult to get much detailed information upon them. Their existence can be assumed, but their effects can hardly be measured.

Displacement.—The economic conditions of the group are, in many respects, exceptional. There is little foreign competition; no female labour; a very small proportion of boy labour, and, on the whole, it is a group in which machinery is able to displace hand-work to no considerable extent. The displacement of Londoners by foreign labour is insignificant, there being, except among marble masons, the makers of the central plaster enrichments of ceilings, and those engaged on some of the patent floorings, practically no aliens employed. The introduction of foreign products is somewhat more important, but it is confined for the most part to a certain amount of "dressed" stone from Italy and Belgium, and wood-work, especially joinery and laths, from the Scandinavian Peninsula.

Provincial competition is a more serious matter. As regards labour, we have seen that the immigration from the provinces is a marked feature in many of the important sections. This is a normal process, however, accepted as a natural consequence of the economic and social attractiveness of London. If the new-comer can hold his own and secure employment at London rates, even though he may be making it harder for someone already in the field to obtain work, the Londoner must not complain. There is reason to expect that, since metropolitan and provincial wage-rates are tending to become more equal, the force of provincial competition will diminish in intensity. Labour is now rarely introduced from the provinces to execute work in London at less than the recognized rates.

The cheap provincial products which by their introduction into the market here may lead to a displacement of London labour, are again (as in the case of the foreigner) dressed stone and joinery. The use of the former of these has been actively resisted at intervals by London masons, and a fresh effort has been made of late to enforce, for the metropolis, the practice that has been secured for some of the provincial towns, by which it would be provided that stone used in London should also be dressed there. In the interests of the consumer there are some arguments in favour of this practice. But they tend to resolve themselves into the question of the probity of the mason contractor, and the attempt to exclude from use on London buildings stone that has been dressed in the provinces would seem to be economically unsound, and to savour somewhat unduly of metropolitan exclusiveness.

The introduction of new processes and new products exercises a considerable effect upon the conditions of the trade, and the existence of materials that can be used as alternatives in construction, weakens the competitive position of several sections of the group. Thus, composition, or artificial stone, affects the mason as dresser. The extended use of terra cotta was, it may be noted, largely

due to the mason's strike in 1878, and the power to use it is said to have had an important effect upon the masons' position during the strike at Cardiff in 1893. In London, where it is probable that as much stone, relatively, is used as ever, terra cotta is rather a substitute for plaster and brick, especially for the former, and its use is doubtlessly largely due to a genuine change in public taste. The use of concrete primarily affects bricklayers and carpenters. In walls it is a substitute for brick-work, and when used as flooring it tends to eliminate the carpenter.

The employment of iron and steel in building construction is having, and seems destined to have, not only a marked effect on street architecture, but also a considerable influence on some classes of workers.

The carpenters are again most widely affected; but when vertical metal supports are used, the bricklayer tends to be, to a certain extent, displaced, less brick-work being needed. On the other hand, windows are often made larger, and more work is thus given to the joiner, glazier, and painter.

Other instances may be mentioned. The fibrous or slab plaster-work dispenses with the labour of a certain number of operative plasterers; and the metal lathing displaces both lathers and lathrenders.* The change of fashion, that has largely substituted ornamental brick-work, terra cotta or stone, for outside plaster-work, has already been mentioned.

Plumbers have found their position weakened, as regards roof-work, by the use of zinc; and in sanitary work by the substitution of manufactured fittings of various kinds, for the old leaden fittings that were hand-made. In the painting trade the use of patent preparations has an appreciable effect on the amount of technical knowledge required by the operative painters.

Specialist work and specialist products exist and multiply on every hand, and all tend to affect one section or another

* Lathrenders, though more properly connected with the building trades (being included in their trade organization) are to be found in the census among the Wood Workers. See Part III.

of the various branches of the trade. The patent wooden or mosaic floorings, affecting the carpenter; electric lighting the gasfitter; and electric bells the bellhanger, may be mentioned as instances.

New processes in one form or another are signs of activity and expansion. In the aggregate they exercise an important effect. They spring into existence from many causes; being due partly to changes in fashion, but chiefly to that inventiveness which is seeking on every hand to substitute, it may be the cheaper or the more durable, the more beautiful or the more convenient, for that which is inferior in one or another of those qualities, and thus to secure what may be summed up as economic gain. In the main, however, the lines of employment are continuous. Change is gradual and, although at times there may be periods of sudden transition involving considerable special hardship to one section or another of the group, as a rule power of adaptation is not outrun by rapidity of change in process or in product, and thus in the general character of the labour demanded.

As regards machinery little need be said, for the building trade is not an industry that is being revolutionized by the introduction of mechanical appliances, nor is it likely that this will ever be the case. But the following points may be noted. In masons' work the increasing use of machinery in the preparation of stone, especially the softer kinds; in brick-work the use of brick-cutting machines for gauged work; and in joinery the steady increase in the variety of wood-working machinery used, not new in kind, but constantly changing and improving in form.

In masons' work the use of machinery is undoubtedly leading to a certain amount of displacement; but in brick-work its effect is unimportant. In joinery it is more difficult to judge of the effects, as opinions in the trade differ widely. On the one hand, it is said that so much is now done by machinery that "finishers" are only

wanted in the large shops, and that a distinct loss of interest in the work is one of the harmful results. On the other hand, it is stated that a great benefit to the operative follows from the use of wood-working machinery, since it not only relieves him of much of the more laborious work, but, by diminishing prices, increases demand, and thus has little or no effect upon the volume of employment. It is also stated that, as a direct consequence of the ease with which so much of the work can now be executed, specifications for wood-work tend often to become more elaborate, and thus to require a much larger amount of labour in the later stages than would have been demanded had use not been made of machinery in the earlier stages. On the whole it can hardly be doubted that, although employment of machinery may lead to cases of individual hardship in this section of the trade, its general effect is beneficial, certainly to the community at large, and, in the long run, probably, in most cases, to the operatives themselves.

Marble polishing, hardly a skilled trade, is said to be prejudicially affected by the increasing use of machinery, and it should be noted that labourers are somewhat more affected by mechanical appliances than any skilled section, the hoists and Scotch derricks being now extensively used, and undoubtedly leading to some displacement of the unskilled man. Hoisters are also somewhat affected by the substitution of the steam for the hand-winch. The use of steam-mortar pans for crushing and mixing has no important effect; and the "steam navvies" are not often used in ordinary building operations, even in the case of large contracts.

Speaking generally, it may be said that, though to an increasing extent materials may be prepared for use by machinery, in the main, building must continue to be a structural operation needing constantly varied adaptations of muscle, and that for such work the machine can never take the place of the man.

CHAPTER IV.

ORGANIZATION, ETC.

We began by regarding the building trade as forming an organic whole, and making it our business to inquire concerning the functions of the component parts. During the later chapters we have considered the various sections separately in reference to different points of economic interest and importance. It remains, briefly, to regard the various sections in relation to the voluntary organizations formed by combinations amongst their members. We have seen that there is a considerable uniformity of condition prevailing as to wages, hours, &c., and this has been largely due, not simply to custom and tradition and to general determining economic forces, but to the presence within the group of organized bodies which, through their representatives, either as employers or employed, can negotiate, confer, differ and agree.

The chief organizations in the group are, on the one hand, the Central Association of Master Builders, and, on the other, the London Building Trades' Federation. The existence of the latter differentiates this group of trades from that of any other in London as regards trade union organization, the Federation being the most conspicuous instance in the metropolis of the successful combination of allied trades. Its existence is largely due to the impulse of the movement of 1892. The London Building Trades' Committee, founded in 1887, had paved the way, but the force of

an industrial conflict—the carpenters' and joiners' strike in the summer of 1891—led more directly to the formation of the more regularly constituted protective "Federation." This conflict, which lasted about six months, ended in a drawn battle; but in the following summer the bricklayers handed in their notices, and the employers, realizing that it would be necessary sooner or later to deal with all branches in the group, proposed a postponement of settlement until the autumn, and a general agreement then with all the trades concerned. It was thought by the men, however, that such a postponement would find work slacker, and the operatives in a weaker position, and under this impulse the formation of the Federation was hastened and made easier. The celebrated agreement of 1892 came into force for the bricklayers in the summer of that year, and for the carpenters and joiners (who had really borne the brunt of the battle), and all the other sections, in November. The Federation has absorbed not only the Building Trades' Committee, but the London United Trade Committee of the carpenters and joiners, and there is now no other important federation within the group.

The following trades unions, representing nearly 40,000 men, are now included in the Building Trades' Federation:—

Operative Bricklayers' Society.
Amalgamated Society of Carpenters and Joiners.
General Union of Carpenters and Joiners.
Perseverance Society of Carpenters and Joiners.
Associated Carpenters and Joiners.
National Association of Operative Plasterers.
Metropolitan Society of Operative Plasterers.
Amalgamated Society of House Decorators and Painters.
London and Counties Painters and Decorators.
Affiliated Societies of House Decorators and Painters.
United Operative Plumbers' Association.
Amalgamated Society of Mill-sawyers and Wood-cutting Machinists.
General Smiths and Fitters.
Engine and Crane Drivers.
Lathrenders' Trade Union.

Window-sash Glaziers' Trade Union.
Building Trade Section, Electrical Trade Union.
United Builders' Labourers' Union.
Navvies, Bricklayers' Labourers and General Labourers' Union.
General Labourers' Amalgamated Union.
Building Trade Section, Gas Workers and General Labourers' Union.
United Order of General Labourers.
Building Trade Section, London and Counties Labour League.
Amalgamated Plumbers' Mates.

Federations also exist in thirty-one provincial centres, and with these the London Society is in communication. It will be noticed that the only large trade union still outside the London Federation is that of the Operative Masons.

Only those inside the trade union movement can judge adequately of the amount of "give and take" necessary to form and develop a great federation representing, as this one does, men receiving different rates of pay and sometimes with interests in many respects conflicting. Some of its members are sanguine that the experience of the Building Trades' Federation justifies the hope that the way is being prepared for the formation of a great single trades union for operative builders, while others point to the short period during which the Federation has been in existence, and hold that there is nothing to justify the belief that it will weather the strain of difficult times, with the pressure of trade conditions adverse rather than favourable. The future only can solve this question; but one grave source of weakness may be noted in the fact that a Federation is only a protective association. It exercises no friendly society functions, and therefore cannot rely upon the stability derivable from these forms of benefit. It will have to justify its existence by the part it plays as a central consultative body; by the security it ensures for the federated societies through the existence of a strong executive representative of all; and by the self-restraint and foresight with which it can wield the force that it at

present controls. Its hold upon the loyalty of its members must spring from the benefits that a protective organization can secure, and these in periods of continued quiescence are sometimes difficult to bring home to the imagination. The more ardent and short-sighted will sometimes call out of season for the demonstration of a power that may be weakened rather than strengthened by outward display. The large additions to the trades unions during recent years tend to accentuate this danger, and a period of prosperous numerical advance in any given group of societies, and thus in the Federation which they form, is also a period of trial, when a strong hand and cool judgment are especially needed to guide those who have great hopes, but little experience, and whose financial stake in their own societies is insignificant.

Trade Societies.

The following tables give particulars of the various trade societies in the group, excepting only those of the Labourers' Unions not exclusively connected with the building trades, and those of the mill-sawyers and wood-cutting machinists, engine and crane drivers, smiths and fitters, lathrenders, and some others. Particulars of all of these are given in other sections of this or succeeding volumes, in chapters dealing with trades under which, in accordance with the census enumeration, it has seemed appropriate to place them. The stated membership of each Society is usually that for 1893 or 1894, and in the case of some of the larger societies the numbers given include members of a few branches which, though belonging to the London district of the Union, are not strictly within the metropolitan census area. In both these respects, therefore, the figures do not quite correspond with the census totals of numbers employed, but the difference is not material. This remark applies to the Trades Union statistics generally in this volume:—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
5914	5036	Friendly Society of Operative Stonemasons of England, Ireland and Wales (1833).	2441	2693	Offers Dispute, Accident and Death money. Travelling Benefit and Pension at no fixed age, but according to need. Members becoming employers may remain in the Society. Sick fund, optional. Enquires strictly into qualification of intending members.
		Amalgamated Operative Masons and Slate Masons' Trade and Benevolent Society.	82		—
		Stone Carvers' Trade Association.	128		—
		Marble Polishers Benefit Society (1878).	42		Out of work pay, Death levy, and Incidental Fund for distress. Members must work at shop price if not under 7*d* per hour.
578	454	London Slaters' and Tilers' Union and Accident Benefit Society (1859).	140	140	To assist members when out of work, or in cases of Accident, and to pay a sum on Death, and to maintain a uniform charge as may be agreed upon between union and employers.
19,427	17,748	Operative Bricklayers' Society (1848).	7133	7165	Has 34 branches in the London District. Offers dispute, Travelling, Sick and Death money. Superannuation after 55 years of age.
		United Operative Bricklayers' Trade, Accident and Burial Society of Great Britain and Ireland (1833).	32		Offers Tramp relief, Strike, Sick, Death, Accident and "Victimised" pay. Legal assistance in accidents or disputes.
25,919	23,238	(*Carried forward*)		9998	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
25,919	23,238	(*Brought forward*)		9998	
		Amalgamated Society of Carpenters and Joiners (1860).	6460		Offers out of work, Strike, Sick, Death, Accident and Superannuation money. Compensation for loss of tools. Forbids sub-contract, or piece-work. Has branches in America and the Colonies. Contingent fund for cases of extreme distress.
		General Union of Operative Carpenters and Joiners (1827).	3007		Benefits as above. At least 1 month's notice to be given to employers in case of dispute. Joins with employers in forming Boards of Conciliation. No Benefits for football accidents.
		Associated Carpenters and Joiners.	372		Benefits as above. Is a Scotch Society.
34,494	28,587	Trade Union of Carpenters and Joiners of London and District.	175	10627	—
		Perseverance Society of Carpenters and Joiners.	172		—
		Carpenters' and Joiners' Protection Society.	53		—
		London Wood and Tin Packing-case Makers' Trade Society.	388		—
		Amalgamated Cornice Pole Workers (1893).	—		Offers Death money only. One of its objects is to shorten hours of labour. Refused numbers.
60,413	51,825	(*Carried forward*)		20,625	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
60,413	51,825	(*Brought forward*)		20,625	
32,666	26,434	Amalgamated Society of House Decorators and Painters (1873).	2300	4607	Has 93 Branches, of which 37 are in London district. Strike, Sick, Death, & Accident money.
		City of London House Painters and Decorators.	170		—
		East London Painters' Trade Union (1873).	491		Strike, Death, and Accident money. Minimum wage, 8½*d*.
		Lond'n Central Associat'n of House Decorators and Painters.	110		Strike, Death, and Accident money.
		Grosvenor Society of House Painters and Decorators.	89		—
		Islington Society and North London Union of House Painters and Decorators.	159		—
		Universal Federation of House and Ship Painters, and Painters' Lab'rers' Union.	40		Is a trade society only, and offers no friendly benefits.
		London and Counties Trade Society of House Painters and Decorators (1889).	700		Offer Strike, Death, and Accident money.
		West End House Painters and Decorators' Trades Union.	200		Offers Strike money only.
		National Unity of Painters and Decorators' Trade Union.	69		Offers out of work, Strike, Sick, Death and Accident money and Pensions. Is a Manchester Society.
		National Amalgamated Society of Operative House and Ship Painters and Decorators (amalgamated 1886).	81		
		Fret-lead Glaziers and Cutters' Union.	118		—
		Window-sash Glaziers' Union (1889).	80		Death money only: minimum wage 8*d* per hour.
		Window-glass Cutters' Trade and Benefit Society.	—		—
93,079	78,259	(*Carried forward*)		25,232	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
93,079	78,259	(*Brought forward*)		25,232	
6891	5563	National Association of Operative Plasterers (1860).	2681	3121	Out of work, Strike, Sick, Accident, Superannuation and Funeral Benefits. Current wages enforced except for aged, infirm or partially disabled.
		Metropolitan Trade Society of Operative Plasterers (1872).	360		Strike, Accident and Funeral pay. Arbitration Committee. Partially disabled, aged, or infirm may work under current wage.
		Fibrous Plasterers' Association (1893).	80		Gives pay to men prevented from working by other Societies. Not admitted to B.T.F.
9346	5878	United Operative Plumbers' Association of Great Britain and Ireland (1865).	1100	1600	Offers Sick, Funeral, Incapacitation, Superannuation, Trade Disputes and Travelling Benefits.
		London Amalgamated Plumbers' Mates' Society (1889).	500		Strike and Death money. Minimum wage 6½*d* per hour. Has 6 branches.
5312	3787	(*Locksmith, bell-hanger, &c.*)	—	—	Partly included in General Smiths and Fitters' Society (See Part III. Metal Trades).
8866	4386*	United Builders' Labourers' Union (1889).	1300	1300	To unite all labourers in the building trades. Offers Dispute, Accident and Death money. Recovered £905 for members as compensation for accidents, without law suits.
123494	97,873			31,253	

Thus, of a total of 97,873 adult males (the census total of the building trades), 29,953, excluding the labourers,

* The total of builders' labourers over twenty employed is obviously misleading. Many labourers will be found in the chapter on "labour," and will be included in such societies as the Navvies', Gas Workers', and General Labourers' Amalgamated Unions.

are members of trades unions. The extent to which the different sections are organized varies from 56 per cent. among plasterers, to 17 per cent. amongst painters. The stone-masons' societies include 53 per cent. of the total in this section, the carpenters' and joiners' unions have 37 per cent., bricklayers 40 per cent., and plumbers 27 per cent. It must, however, be remembered that in each of these cases the census totals include a certain number of labourers and odd men who would not be admitted to the unions of the skilled mechanics.

It is stated that about 13,000 builders' labourers are represented on the Building Trades' Federation by the six affiliated societies, and we thus have, with the 29,953 mechanics, a total of about 43,000 organized members of the building trades, nearly all of whom, with the exception of the Operative Stone-masons, are included in the Federation.

The following federations and societies are also connected with the building trades :—

(1) The London Building Trades' Federation and the Master Builders' Association, already referred to.

(2) The Affiliated Societies of London and Suburban Painters' and House Decorators' Trade Union, which is an affiliation of the City of London, West End, Islington, Grosvenor, and London Central Painters' and Decorators' Societies for trade purposes only. In this form they are represented on the Building Trades' Federation.

(3) The Clerk of Works' Association of Great Britain, founded in 1882 to "advance the general knowledge and capabilities of the members, and to maintain their respectability and integrity"; and also "to neutralize the disadvantages of enforced isolation under which many clerks of works now labour." They have 135 members, of whom about half are employed in the country.

(4) The Provident Institution of Builders' Foremen and Clerks of Works, established in 1842. Grants pensions to members and widows of members; pays funeral expenses; and assists the orphan children of members. Any qualified builders' foreman or clerk of works, under 45, admitted. Membership (1894), 114; income, £787 (members' contributions, £203; honorary subscribers, £226; the balance from investments). Is a philanthropic institution, with patrons and directors.

Co-operative building enterprise is weak in London, but the following societies may be mentioned here :—

(1) The Co-operative Builders' Society. Originally formed on a profit-sharing basis; has undertaken several considerable contracts, and flourished for some years as a co-operative society; but, in spite of a considerable loan from its chief supporter, has failed to hold its own, and is now being re-constituted.

(2) The General Builders' Co-operative Society. Shares, £1; entrance fee, 1*s*. Has not yet begun active operations. Has branches in London and Provinces. Total membership (June, 1894), 456; increase during half-year, 120; London members, 300.

(3) The London Central Association of House Painters and Decorators (N.W.); founded 1887. Membership, 28.

(4) The Co-operative House Painters and Decorators (S.W.). Members, 28.

(5) The Excelsior Co-operative Builders and Decorators (S.E.). Members, 28.

(6) The Essex Builders' and Decorators' Co-operative Society, Limited; founded in 1891.

Five other small societies have been enumerated; two of these are in liquidation.

A few of the trade societies given in the table above preface their rules with an exhortation to members, in which the advantages of trade unionism are fully set forth. Then follow the name and meeting-place, the constitution and objects, and the rules relating to the general management of the society.

The "objects" resemble one another very closely, and may be summed up as the offering of (*a*) Friendly and (*b*) Trade benefits; the variety of benefits offered differing with the size and position of the individual union.

Friendly benefits, in their fullest expression, consist in money payments when out of work; when "travelling" in search of employment; or when sick, at death, after an accident ("if not the result of football, &c."), or on superannuation; on loss of tools, &c. Trade benefits include allowances during strikes; legal assistance in trade

matters; the regulation of the relations between "employers and employed," or "workmen and workmen"; the general defence of trade privileges, and offers of help to other trade societies in case of need.

A few societies also admit members for trade purposes only with the object of including older men, and, at the same time, preventing their becoming an undue burthen upon the "Friendly" section; and some have a contingent fund, which is set apart for the relief of any members who may find themselves in exceptionally distressed circumstances. Financial policy differs widely in the various societies, both as regards the separation of funds available for friendly and trade purposes, and in the limit fixed up to which funds must be kept, if need be, by special levy. The bricklayers fix the amount at 30*s* per member, and the amalgamated carpenters and joiners at £2; while the masons have a fixed total of £3000 as the minimum reserve, irrespective of membership.

The subscription paid by members of the different societies varies considerably; carpenters subscribe 1*s* a week, bricklayers and plumbers 9*d* a week, masons 7*d*, plasterers 6*d*, builders' labourers 3*d*, and painters from 8*d* to 3*d* a week. Out of work pay usually commences at 12*s* or 8*s*, and falls, after a certain period, to 6*s* or 4*s*; whilst strike money is 15*s* a week for carpenters and plumbers, 12*s* for masons, and 10*s* for painters. Bricklayers', carpenters', and some of the plasterers' and painters' societies offer sick pay, in amounts starting at 12*s* and 10*s*, falling to 8*s* and 6*s* after as many weeks, and then to a smaller sum, at which it continues till health is regained. With masons, provision against sickness is optional. In case of the death of a member, from £10 to £7 is paid, or half these amounts on decease of wife, and lump sums of £100 or £50 are awarded in cases of total incapacitation through accident. Several societies give superannuation after twenty years' membership or sixty years of age is attained—amounts

varying from 12*s* to 4*s* a week. In the masons' society there is no limit as regards age, each case being dealt with on its merits.

Out of twenty societies, in which particulars of benefits offered are given in the above tables, only two offered trade protection benefits—*i.e.* dispute pay and legal protection—and nothing else. The friendly society benefits offered by the remaining eighteen societies are as follows:—

Burial benefit	offered	by	eighteen	societies.	
Accident	,,	,,	,,	twelve	,,
Sick	,,	,,	,,	nine	,,
Superannuation	,,	,,	,,	eight	,,
Out of work	,,	,,	,,	seven	,,
Travelling	,,	,,	,,	four	,,
Loss of tools	,,	,,	,,	three	,,

The permission given in many cases to older men to join only the trade section of their society, and, in some cases, the obligation, if they join at all, to do so, has been already mentioned; but, with a very few exceptions, the dominant opinion in the trade unions of this group points to a fuller recognition of the value and steadying force of the "friendly" side of the trade union movement.

In favour of the purely protective society, such arguments as the essential difference of functions of the trade union and the friendly society, the freer action of the former when separated from the latter, and the freedom secured to the trade society when thus separated from the evils of malingering, are urged. But such reasoning is overridden in the opinion of the great majority of trade unionists by the arguments, based on the severe teachings of experience, that permanent stability and loyalty to the society can at present only be assured by some enduring bond, in addition to the advantages secured by a purely protective organization.

Labour Disputes.

The fundamental and universal principle of trade unionism is to secure, by combination, a greater equality in competition than could be assured to the individual when acting alone; and in connection with this aim, there are certain main objects, such as the maintenance of or rise in the rate of wages, or the shortening of the hours of labour, that all societies, at one period or another of their existence, place before themselves. Trades tend, however, to have their more special objects determined, sometimes by the particular conditions and character of the trades concerned, and sometimes by the strength of the organizations formed. Some of these will be illustrated by the following enumeration of the disputes mentioned in the reports of the London Building Trades' Committee and the Building Trades' Federation for 1889-1893 :—

Trade.	Causes of Dispute.	Year.	Mode of Settlement.
Carpenters	Sub-letting of Carpenters' work at Post-office.	1889	The sub-contractor discharged by the Board of Works.
Stonemasons	Sub-letting of stone-work at the Imperial Institute.	1889	Decided that this sub-contract could not be cancelled, but that no other should be allowed.
Bricklayers	Sub-letting of brick-work at Sewage works.	1889	L.C.C. fined the contractor £500.
Building Trades' Committee	Protest against two firms receiving contracts as "they are unfair employers."	1889	
Plasterers	Sub-letting of work at Police Offices, Whitehall	1889	Home Secretary refused to interfere at first, saying, that it was not a case of sub-contract. The services of the man complained of afterwards dispensed with.
Plasterers	Sub-letting of plastering	1889	Promise by authorities that this builder should not again be employed.

Trade.	Causes of Dispute.	Year.	Mode of Settlement.
Stonemasons	Sub-letting of stone-work at Tower Bridge	1889	
Bricklayers	Sub-letting of brick-work at Tower Bridge	1889	
Building Trades' Committee	Manifesto condemning a Profit-sharing scheme	1889	
Plasterers	Sub-letting at new Birmingham Post-office	1890	Unsatisfactory reply from Board of Works.
Building Trades' Committee	Hours of work not in accordance with Union rules	1890	L.C.C. refused to interfere.
Plasterers	Sub-letting	1890	
Stonemasons	Sub-letting at Clissold Park	1890	L.C.C. forbade the sub-contract.
Bricklayers	Paying less than 9*d* to bricklayers, on understanding that profits were to be shared	1890	L.C.C. interfered, and 9*d* was paid.
Labourers	Struck for 6*d* per hour	1890	Strike was successful.
Plasterers	Payment of 8*d* instead of 9*d* by London School Board	1890	9*d* was paid.
Carpenters	Working overtime at ordinary rate	1890	Overtime-rate promised by L.S.B., but apparently not paid.
Bricklayers	(1) Sub-letting of painting at a Board School	1890	L.S.B. ordered the contractor to stop both practices.
	(2) Employment of labourers to put on cross-joints	1890	
Bricklayers	Sub-letting at a new Workhouse	1890	Guardians dismissed the sub-contractor.
Carpenters	Sub-letting of flooring at a Workhouse	1890	No reply from the Guardians.
Plasterers	Sub-letting of plaster-work at Imperial Institute	1890	No definite agreement made.
Masons and Plasterers	(1) Sub-letting of plaster and stone-work	1890	Sub-contractor to be dispensed with in future.
	(2) Working 10 hours a day	1890	9½ hours agreed upon.
Bricklayers	Sub-letting at a London Hospital	1890	Promised to discontinue.
	Non-union hours at a Post-office	1890	Union hours agreed upon.
Slaters & Tilers	Employing a sub-contractor "who is not a fair employer"	1890	The sub-contractor threatened to bring a libel action.
Lathrenders	Use of inferior laths: (*a*) On L.S.B. work	1890	(*a*) Ceilings condemned.
	(*b*) At a Police Station	1890	(*b*) Home Secretary refused to interfere.
	(*c*) At City offices	1890	

Trade.	Causes of Dispute.	Year.	Mode of Settlement.
Window-sash Glaziers	Sub-letting	1890	Promise to discontinue.
Bricklayers	Sub-letting	1890	The contractor said to be a fair employer, but B.T.C. was not satisfied.
Plasterers	(*a*) Overtime without extra rate at People's Palace	1890	Satisfactory settlement.
	(*b*) Sub-letting at People's Palace	1890	
Painters	Reduction of painters' money from 8½*d* to 7½*d* on a contract for Board of Works	1891	8*d* paid.
Stonemasons	Sub-letting at new Post-office	1891	Explanation that it was due to pressure of work, but that no further sub-letting would occur.
Bricklayers	Sub-letting at Aldershot Barracks	1891	House of Commons' pledges to be observed.
Carpenters	Sub-letting of joinery at an Asylum to a Liverpool firm who were paying low wages	1891	L.C.C. ordered the firm to discontinue the practice.
Painters	Sub-letting at an Asylum	1891	L.C.C. Committee at first refused to interfere, but afterwards ordered the sub-contract to be terminated within a fortnight.
Carpenters	Wages at an Asylum below Union rate	1891	L.C.C. granted the request.
Carpenters	Removal of manufacture of joinery from London to Cane Hill	1891	L.C.C. did not interfere.
Glaziers	Glazing for S.W.R. twice sub-let	1891	Chairman replied that all sweating should be prevented.
Glaziers	Sub-letting on Government buildings at Clerkenwell	1891	Office of Works replied that the work was not sub-let.
Painters	Scamping at a West End mansion	1891	
Plasterers	Tyrannical conduct of foreman	1891	Refusal by authorities to interfere. Plasterers then struck for eleven weeks, and the foreman was eventually dismissed.
Lathrenders	Using single lath instead of lath and a half at Battersea Station	1891	Chairman of Committee replied that only single lath was specified.
Joiners	Working till 5.30	1891	5 o'clock granted.

Trade.	Causes of Dispute.	Year.	Mode of Settlement.
Carpenters	Piece-work on several L.C.C. jobs	1891	Contractor threatened a libel action. Case withdrawn by L.B.T.C.
Carpenters	Piece-work on L.S.B. contracts	1891	Contractor threatened legal proceedings. Case withdrawn by L.B.T.C.
Carpenters	Not paying union wages on L.S.B. jobs	1891	L.S.B. replied that an inspection of wages book did not bear out this assertion.
Bricklayers	Sub-letting of pointing and brick-work at various schools	1891	L.S.B. replied that all sub-contracts had been forbidden.
Painters	Non-payment of union rate by Salvation Army	1891	No reply.
Lath-renders	Use of foreign and machine-made laths at Aldershot instead of proper split laths	1892	At first refusal to interfere, but grievance afterwards redressed.
Bricklayers	Sub-letting at Barracks	1892	Refusal to interfere and sixty-one bricklayers left work.
Painters	Paying painters 7½*d* only	1892	Refusal to interfere, but wages afterwards increased.
Carpenters	(*a*) Unfair mode of employment at G.P.O. (*b*) Piece-work	1892	Postmaster-General refused to interfere.
Plasterers	Sub-letting at a Police Court	1892	Commissioner of Works stated that he had given his consent to the sub-contract.
Plasterers	Sub-letting at Brixton Post-office	1892	No definite promise obtained.
Plasterers	Sub-letting on L.S.B. work	1892	L.S.B. replied that the Architect had permitted it, as it was a special case.
Carpenters	Long hours on L.S.B. contracts	1892	No reply.
Building Trades' Committee	Usage of workmen by contractors employed by Salvation Army	1892	No reply.
Painters	Painters getting 7½*d* only	1892	Agreed to pay 8*d* and 8½*d*.
Glaziers	Generally complain of piece-masters and middlemen	1892	
Several Trades	Non-union rate and hours	1893	

Sub-contracting.—One at least of the special objects that help to bind trade unionists together in the building trades is brought into prominence by the above enumeration, viz.

the abolition of the "sub-contractor."* On analyzing the grievance it is found that it has been due, not to excessive hours or the payment of lower rates of wages, but to certain conditions of employment that it is held tend to accompany the practice of sub-contracting. On the unfortunate use of this word and on the absurdity of the view, that, as a form of employment, it is necessarily harmful, it is needless to enlarge, since in more or less disguised forms it is the necessary accompaniment of almost every considerable business undertaking. It is when the sub-contractor appears as the "piece-master" or "sweater" that special exception is taken by the operative builder. The sub-contractor in this sense, owning no plant and supplying no material of his own, has been graphically described in one of our interviews as one "who gets his profits solely out of the blood and sinew of men." What, then, are the disadvantages urged against this system, which is adopted, not only to save trouble to the main contractor and to enable him to make up his estimates with a more complete knowledge than would otherwise be possible of the expenditure involved, but also, and above all, to secure an effective control of the labour expended? The following answers are given: that the system leads to undue pressure upon the men employed, tending to substitute a time-task system for a genuine time-wage; that the consequent rushing of the work not only leads to the exclusion of other men who might otherwise reasonably hope to secure employment, but also to the scamping of the work, and, in some cases, to hasty preparation of the materials used, and to adulteration, when greater speed in working is thereby secured. The shifting of the main contractor's responsibility in case of accident is also a serious source of complaint, it being urged that the sub-contractors are often "men of straw,"

* In the plastering trade it is to be noted that this has been a particularly frequent source of complaint.

who would be unable to meet the extra liabilities that a mishap might at any time tend to throw upon them.

If the sub-contractor, however, is a man owning his own plant and supplying materials as well as employing labour, his participation in a contract does not become a source of complaint. It is the abuse of the system of sub-contracting to which objection is taken, an abuse by which the "piece-master" tends to convert labour into toil, and to prevent the execution of good work. Hostility to the system has often been undiscriminating, but the instinct of the men has been sound, and the general recognition of the justice of their position by most public authorities, as well as the disclosures of the House of Lords' Inquiry into the Sweating System, go far to justify the action they have taken.

But the elimination of the sub-contractor, in the sense of the piece-master who employs labour only, while it removes the sweater, must also displace some whose position in the trade was open to no objection.

The removal of such men means economic loss, and in their own interests, as well as those of the trade as a whole, it is important that the operatives should make it their business to see that, having freed themselves from the piece-master, and in some other ways from the effective direction of their labour, they do not unduly free themselves from a control necessary for the general advantage.

There are, in fact, certain dangers in the adoption of a general time-rate in connection with strongly organized bodies of men, and there are many complaints of the ineffectiveness of much of the labour in the London building trades of to-day. There is nothing that a good workman resents more than a nagging foreman or the pressing sweater. To a great extent the London operative builder has, by his own force of combination, freed himself from these evils, and has by so doing shifted the responsibility on to his own shoulders for the amount of work that

is put into the day; and there is much to show that the responsibility, resting where it now does, is evaded by many. If this responsibility is not emphasized, and, if need be, met by the authority of the leaders, friction will inevitably result. The attempted re-introduction of some modified form of piece-work will follow, and meanwhile the increased cost of building will tend to check demand and curtail the field of employment. The argument also seems not without weight, that the increased expensiveness of good building, due to the aggravated cost of labour, often gives the jerry-builder his chance. The unscrupulous employer is thus enabled to secure a place in the building market of the metropolis that would be closed to him if building operations, carried out under fair and desirable conditions, were not made more than proportionately costly through the interpretation put by many operatives upon the meaning of the words—difficult to define and make exact in their application, but none the less with a real significance—"a fair day's work for a fair day's pay."

Overlapping and non-union labour.—The tables printed on pp. 148-51 illustrate, as we have seen, the prominence given to the question of sub-contracting during the period to which the particulars refer. A certain change in the points agitating the trade union world is noticeable in more recent times, as is indicated in the following short list of disputes mentioned in the Quarterly Circular of the London Building Trades' Federation, December, 1894:—

Trade.	Nature of Dispute.	Settlement.
Plasterers.	Introduction of free labour.	Free labourers removed.
Bricklayers.	Ditto.	Not settled.
Carpenters and Joiners.	Departure from Agreement of 1892.	Agreement conformed to.
Bricklayers.	Slaters and tilers employed to do bricklayers'work, and the introduction of a "black" plasterer.	Plasterer removed, and an agreement (nature of which is not indicated) arrived at.
Carpenters and Joiners.	Introduction of piece-work.	Piece-work discontinued.
Carpenters and Joiners.	Introduction of free labourers.	Free labourers removed.
Bricklayers.	Slater and tilers employed to do roof-tiling.	"Owing to cessation of work, pickets withdrawn."
Bricklayers.	Introduction of piece-work pointers.	"The completion of work prevented satisfactory settlement."
Carpenters and Bricklayers.	Introduction of free labourers and piece-work.	Although the free-labour carpenters "were speedily cleared, the firm subsequently discharged union bricklayers and engaged piece-work pointers and tilers and free-labour bricklayers."

The two sources of misunderstanding emphasized here are—(1) Disputes arising from overlapping, *i.e.* from uncertainty as to the proper sphere of certain allied branches of the trade; and (2) The disputes arising from one aspect of the non-union labour question.

The former question opens up an interesting and important subject, and a full presentment of the points raised would require a history of the trades between which misunderstanding has arisen, and an attempt to discover by historical analysis the rights and wrongs of the claims advanced. The following are among the spheres of work of which the apportionment remains in some doubt, and which, therefore, are liable to lead to friction.

The fixing of some terra-cotta work is apt to be claimed both by masons and bricklayers; and there are also instances of dispute as to which class of men should fix such portions of work as the stone sills of windows when

the total amount of masonry on the building is small. In some provincial towns there is a local agreement on these points.

Among bricklayers we find doubt as to the propriety of the plasterers' claim to do some of the inside tiling, and a rough working arrangement has been arrived at by which bricklayers deal with those tiles which are fixed in connection with brick-work, and the work is otherwise left to the specialist tile-fixer or the plasterer.

There is also an important dispute between the roof-tilers and the bricklayers, and on its merits many and divergent opinions are expressed. The dispute is doubtless accentuated by the fact that the tilers work for a longer day than that recognized by the Agreement; undertake a good deal of piece-work; and allow labourers to do some of the easier parts of the work. But although the bricklayers resent and object to all these practices they advance their claim as a matter of right, and the ultimate settlement of the dispute will doubtless turn upon the extent to which roof-tiling offers a sufficient field, both as regards the process and the extent of the demand in London, for the acquirement of special technical skill, and thus for the increased economy secured by employing those who confine themselves to this particular kind of work.*

The objection of the bricklayer to the specialized "pointer" has been already mentioned.

The carpenters and joiners have their long-standing dispute with the shipwrights. During the last few years,

* There seems to be a general consensus of opinion that bricklayers as a rule cannot do tiling as quickly as tilers themselves, but that the work is easily learnt. For instance, one bricklayer tells us, that "not one in a hundred bricklayers can do tiling properly, but it is quickly learned;" and another, holding the opinion that tiling "is the cream of our work, bricklaying being the heavier part," adds that 50 per cent. of the bricklayers can do it, "although their hand is not so well in as those who specialize on it."

Slaters and tilers are generally employed by the slate and tile merchant, who sometimes supplies at so much per square foot for materials only, but more often at a price that includes the putting on. When the contract is of this nature, he sends his own men, and these would rarely, if ever, be bricklayers.

while the iron-work in ship-building has tended steadily to increase, shipwrights have been driven to cast about for a wider field of employment. They tend thus to encroach upon the domain of the carpenter, and collision has resulted; the latter resisting the demand put forward by the shipwrights to work all above 1½-inch timber, and holding that the proper limit should be 2 inches. The issue of the dispute is doubtful, and some of the longest heads in the trades concerned look to amalgamation as the best method of solving the present differences. The same solution, it may be noted, is advocated by many as regards bricklayers and tilers, the admission of slaters and tilers to the Bricklayers' Union, and the amalgamation of the existing Slaters and Tilers' Union, being advocated by them.

The joiners and the cabinet-makers also occasionally come into conflict. The trade union rates differ, that of the cabinet-makers being 8½*d* an hour, or a penny less than that of the joiner. It is true that most West London firms, employing cabinet-makers, pay 9½*d*, but these men are willing to work longer hours than those laid down by the Agreement of 1892, and thus, although rates of pay may correspond, the different length of the working day remains as a difficulty.

In the fittings, also, of electric-lighting, the not infrequent employment of handy men or of specialists, is resented by the fully-skilled carpenter.

The claim of the plasterers to the work of the lathers, a class of men who hold their own by the great knack that constant practice in a single branch secures them, and the ill-concealed objection of the same class to the fibrous, or slab-plaster workers, have already been mentioned.

The plumbers and fitters have many knotty questions to settle; and the complaint of the marble masons, that plumbers in some cases fix the slabs in sanitary jobs, is a further instance of the problem of overlapping. The points at issue between the plumber and fitter are emphasized by the fact that the latter receives a penny per hour less than the plumber, and that there is a constant

inducement therefore to employers to favour the fitter when there is any disputed piece of work to be alloted.

The well-known difficulty arising from the use of the tools of the skilled man by labourers must again be mentioned here. Most of the trade unions of skilled men rule against the practice, and in their reports, especially as regards provincial work, the point is constantly arising, shops being put on the "black" list because of the employment of labourers to do skilled work. In London the practice is becoming much less common, the position of the various sections being far more sharply differentiated, and the position of the labourers being, largely through the instrumentality of their trade unions, more definitely recognized. It is also important to remember that, although the skilled man resents the employment of the labourer on skilled work, the fact that the latter is constantly qualifying for admission to the ranks of the skilled man is frankly recognized and accepted. The condition made, however, is that when working in the superior capacity he should earn the full rate of pay. It is also stated that the passage of the labourer to the ranks of the skilled trade is much less common now than of old, a feature which seems to be the natural sequel to the improved status of the former class.

One safeguard against friction arising from overlapping will always be found when the trades concerned are carried on under conditions (*e.g.* as regards piece-work, sub-letting, &c.) that commend themselves generally to the opinion and to the practice of the whole group. But even if there be this safeguard—invention, business initiative, and the pressure of competition will tend to change the scope of trades, and margins of doubtful territory will probably always exist. The possibility of change, therefore, must be always recognized, and trades, as well as characters, are liable to a continuous development or deterioration. The unintelligent demand, therefore, for the retention of privileges claimed at any given time will always be liable

to hasten, or even to create, a tendency towards the substitution of one product or process for another, and the result may be to weaken rather than strengthen the trade whose position it is sought to defend.*

In many trades, indeed, there is no great fixity of tenure, and no compensation for disturbance can be claimed, nor any resistance be successfully made for long, to displacement due to underlying economic forces. It is not within our province to decide on the rights and wrongs of the claims put forward on behalf of particular trades. But we may emphasize the need of constantly varying adaptations, and the wisdom and expediency of a trade policy that shall have far wider and more elastic aims than the retention of a sphere of work recognized at any given time. If it is to hold its own and command respect, a trade policy must be comprehensive, not selfish or exclusive; for it must be remembered that in trades, as well as in the realms of Arthurian legend, "the old order changeth," and that, sometimes, it is necessary to give place with boldness and without delay to newer forms.

The second source of dispute, to which the above table calls attention, is "the introduction of 'free labour,'" and it is necessary to understand the meaning of the phrase. That it is not simply non-unionist labour is made clear by the recollection that during the carpenters' and joiners' strike in 1891, non-unionists stood out with the union men; that a special strike fund was organized on their behalf; and that they were subsequently represented in the negotiations with the employers. The "free labourer" is, it is true, a non-unionist, but is scarcely to be described by a mere negative when he places himself at the disposal of a society hostile to trades unionism; and strenuous resistance by the older organizations to this form of attack is inevitable.

* Thus, in the case of one contractor, whose bricklayers struck against the employment of tilers for roof-work, slates were used instead of tiles, and independence of the bricklayers was still further secured by the use of concrete instead of brick in party walls.

The formation of an association of free labourers may, however, prove beneficial. It may, for instance, remind trades unionists of their duties and responsibilities as participators in a great movement, and it should make all, rank and file as well as leaders, be careful to see that the charge of "tyranny" has no foundation in fact. At the present time it is, undoubtedly, in many shops, practically impossible for a non-society man to obtain work, or, if he obtain it, to remain outside the union of his trade. But there is no general adoption of a policy which prohibits society men from working with those outside. The former are, indeed, not strong enough to take such a stand, and, even if they were, the best leaders recognize that compulsory membership is a source of danger leading to weakness rather than to strength.

In a considerable number of cases it is doubtless true that members of some trades have raised difficulties about working with non-unionists as such, but although in many cases their action has been successful, owing to the worry and possible loss involved in resisting it, it is doubtful whether the executives of any society would call their men out simply because non-unionists were employed.

We may hope that the "free" labour question may be settled by other means than conflict; or that, if conflict be inevitable, the principle of trade unionism may be purified and strengthened, and not weakened in the struggle. One of the great services that the unions have still to render to society, in addition to forming a necessary part of future schemes for industrial arbitration and conciliation, is the clearer demarcation of that less competent class among whom the "unemployed" will, save in times of exceptional distress, nearly always be found. It is of the first importance that existing organizations should grow, even on this ground alone. By their steady expansion and wise generalship, the service they can render in the future to the community at large may rival that which they already render to their own members.

CHAPTER V.

ABUSES—SOCIAL CONDITION.

Abuses.

Many of the foregoing pages have illustrated the complexity of the conditions under which the building trades are carried on. A system of contracts involving, as it often does, the co-operation of many classes of men, the use of a hundred products, and the execution of a hundred tasks, is difficult to check in every detail, and, in one form or another, abuses tend to creep in.

The following points may be more especially mentioned:—

(1.) In the placing of specifications for tenders, builders may be asked to estimate for work which they are not anxious to secure, but for which they do not like to refuse to send in a price. In the case of a City hotel, for instance, a few years back, thirteen firms were asked to give estimates, and of these no fewer than eleven sent in a "complimentary" tender, two only being left in genuine competition.

Frequently, however, there is an excessive stress of competition, and this again leads to tenders being made up on an unsatisfactory basis. The expense of materials can be calculated to within about $2\frac{1}{2}$ per cent. of actual cost and, when competition is keen, the margin of profit on these can be safely reduced to a minimum. But the cost of labour is comparatively an unknown quantity, and thus

becomes the recognized field in which good management may seek to find its profit. *

The difficulty of squeezing labour, and the need of squeezing something, thus tend to lead to those forms of abuse that are found in sub-letting under bad conditions, and the difficulty of securing a fair profit on materials tempts to the substitution of inferior stuff.

(2.) The use of "extras": A low-profit contract is not unfrequently taken, on the assumption that there are sure to be extras, and that these will be available to make up all deficiencies. They are, indeed, the last resource of the builder, difficult to check; and, from the client's point of

* The proportion of the cost of labour to the cost of materials will vary somewhat according to the nature of the job, but roughly it stands at something over one-third of the total, excluding wages paid for superintendence. The proportional expense of labour, as already indicated, is tending to increase. The following table of approximate proportional costs is given in Laxton's "Builders' Price Book":—

Trade.	Approximate Proportion of Material.	Approximate Proportion of Labour.
Drainage Work	$66\frac{2}{3}$ per cent.	$33\frac{1}{3}$ per cent.
Bricklayer	$66\frac{2}{3}$,, ,,	$33\frac{1}{3}$,, ,,
Mason	$33\frac{1}{3}$,, ,,	$66\frac{2}{3}$,, ,,
Carpenter	$66\frac{2}{3}$,, ,,	$33\frac{1}{3}$,, ,,
Joiner	$33\frac{1}{3}$,, ,,	$66\frac{2}{3}$,, ,,
Plasterer	50 ,, ,,	50 ,, ,,
Plumber	75 ,, ,,	25 ,, ,,
Painter	40 ,, ,,	60 ,, ,,

In estimates for the prime cost of a rod of brick-work for 1878 and 1893 the total was £12. 17*s* 6*d* in the former, and £12. 3*s* in the latter year. But, while the prices allowed for materials had diminished, the price allowed for the labour had increased from £2. 10*s* to £3. 5*s*, or 30 per cent.

For carpentering and joinery the increase in the cost of labour is estimated at 20 per cent.; for masons' work at 28 per cent.; plastering, 33 per cent., and for internal plumbing nearly 30 per cent. in the same period. The prices for most materials, including bricks, are too fluctuating to be usefully compared.

view, a dangerously elastic item, needing the careful revision of a responsible architect. The practice of passing exorbitant charges for extras is not unknown.

(3.) The abuse of the certificate system: The general practice of granting certificates enables a class of contractors to enter into competition who have little capital and less responsibility. The presence of these men—often not practical builders at all, though generally capable men of business—tends to intensify all the evils arising from sub-letting and the pressure of cutting down due to excessive competition. As a class, these contractors are most often found in the suburban speculative trade. It is stated that second-rate architects sometimes grant certificates before work has been executed.

(4.) The responsible and difficult position of the clerk of the works has been already mentioned. Failure to fill it properly may be due either to neglect or collusion, but it is clear that strong temptations will sometimes be offered to induce the representatives of the client to pass inferior qualities, or to allow the use of materials other than those specified.

(5.) The deceitfulness of a showy outside: Many of the showy specialities of to-day in the building, as well as in other trades, conceal commodities that are "cheap and nasty;" and electric bells, a bath-room, an ornate frontage, or a gaily-tiled entrance, often mask a multitude of defects in the essentials of a substantial and sanitary dwelling.

(6.) As regards the use of bad materials, instances are to be found in the mixing of bad mortar that will neither harden nor hold fast, and of rubbish in filling up the foundations; in the use of unseasoned and defective timber, concealed, perhaps, by paint; and in the adulteration of paint by, for instance, the use of paraffin or Russian mineral turpentine, in place of the proper commodity, or of boiled oil and turpentine for pure varnish; or, again, in the use of thinner glass than had been specified.

(7.) As regards workmanship, we have the bricklayer leaving joints improperly filled in, the painter putting on two coats when three have been ordered and will be paid for; and the general temptation to hurry over and badly execute work that is least open to inspection, or that is perhaps entirely concealed.

Many a small suburban workman's cottage, with perhaps a charming exterior, contains not a few of the evils consequent on the employment of bad workmanship and the use of bad material, with drainage defective, the plaster "faked," timber half-seasoned, and the mortar half mould. One of the worst features revealed by this inquiry has, indeed, been the assumption made by so many that although it was difficult in any case to be sure of the execution of good work, much of the cottage building of the suburbs must necessarily be carried on under the worst of all conditions: that there, if anywhere, work was sure to be scamped and materials sure to be inferior.

The re-action, not only upon the skill, but upon the *morale* of the trade, of work executed under such conditions as the foregoing, needs no emphasis. Such evils as have been cited need for their cure, on the one hand, the utmost caution of the public, and, on the other, the resistance of all the responsible members of the trade, both professional men, employers, and operatives, who are concerned for its corporate character.

It has been necessary to refer to these matters because no picture of the trade would be complete that did not indicate the presence of such blots upon the face of a great industry. But the enumeration of particular defects must not lead our readers to a hasty generalization. It would be as unwise and unfair to indict a trade as it is foolish "to indict a nation."

Health.

The employment cannot be regarded as an unhealthy or a dangerous one, though plumbers and painters run some risk of lead-poisoning, and all who work on the buildings are liable, from exposure to the weather, to those chills and ills to which rheumatic flesh is heir. As regards dangerousness, the steeple jack is the only member whose calling is really hazardous. The scaffolder, the hoister, and the roof worker need steady heads, but, given these, their risks are not great.

Social Condition.

A comparison may now be made between the wages earned as shown by the statistics given in Chapter III., and the style of life as indicated by the number of rooms occupied.

Taking the building trades as a whole, the figures are as follows:—*

Comparison between Earnings and Style of Life (Building Trades).

Earnings as returned.			*Classification of Population.*		
Under 20*s*..	104, or	2½ per cent.	3 or more in each room,	66,750, or	18 per cent.
20*s* to 25*s*..	418 ,,	8 ,,	2 to 3 ,,	102,400 ,,	27 ,,
25*s* ,, 30*s*..	1488 ,,	29½ ,,	1 ,, 2 ,,	108,250 ,,	29 ,,
30*s* ,, 35*s*..	575 ,,	11 ,,	Less than 1 ,,		
35*s* ,, 40*s*..	1454 ,,	29 ,,	More than 4 rooms	98,000 ,,	26 ,,
40*s* ,, 45*s*..	807 ,,	16 ,,	4 or more persons to 1 servant		
45*s* and over	220 ,,	4 ,,			
	5066	100 ,,		375,400 ,,	100 ,,
			Employers' families and servants	38,259	
				413,659	

* In this comparison, and in the similar comparisons made for each section, and in every trade in turn, a deduction has been made for the

The 10 per cent. earning less than 25*s* compare with 18 per cent. living in crowded conditions. The 29½ per cent. earning from 25*s* to 30*s* compare with 27 per cent. living with not less than two nor more than three persons in each room; and in this category must be included the 11 per cent. earning less than 35*s*, as irregularity of work may be supposed to drag down a proportion from each division. Thus, in total, we have 51 per cent. whose earnings are given as less than 35*s*, as compared to 45 per cent. who live not less than two persons in each room. These include all the labourers, and the less well paid among the artisans. The great mass of artisan labour in these trades, however, receives at least 35*s*. The table shows 29 per cent. earning 35*s* to 40*s*, comparing exactly with those families who have one to two persons to each room, and above that level there are 20 per cent. as compared to the 26 per cent. of the population concerned who occupy more than four rooms to each family, that is, have a house to themselves, or, if living in fewer rooms, occupy more rooms than there are persons in the family, or, finally, are included in those who employ a single servant for not less than four persons.

Similar comparisons may be made for each section, and the materials for doing so are provided in the appendix, but the divided numbers are too small to make the results of any great value. Even when all are added together the total numbers as to whom our wages statistics speak are too few, compared to the whole number engaged in the trade, to provide more than an indication of or approximation to the truth.

families of employers based on the assumption that they will live in better style than those they employ.

In trades which include any large proportion of female heads of families a similar deduction has been made, but with the opposite assumption, viz. that these will on the whole live in a poorer way than the families which have a male head. The families of men returned as neither employer nor employed are, unless otherwise mentioned, treated as being on the same level as the employed.

With reference to customs there is little that need be written. Meals are much more often than formerly taken on the job or in the shop, as, since the Agreement of 1892 (see Rule 8), better provision, both for warming and cooking food, has been made for the convenience of the operatives. Food is rarely eaten before leaving home in the morning, although some may take a cup of cocoa or other warm drink before starting. A commoner practice is to have something on the road, the something often being a cup of coffee, or a glass of rum and milk. Food and tea, or the means of making it, are nearly always taken from the home, to be eaten in some corner of the workshop or of the building upon which they are engaged—for breakfast, bread and butter, with, perhaps, bacon; for dinner, bread again and cold meat, and sometimes pudding and vegetables. Beer, if wanted, would be sent for, and many, probably about half for dinner, and a smaller proportion for breakfast, would take their meals at a coffee-shop or public-house, if one is to be found in the neighbourhood of their work.* Breakfast and dinner are the only meals taken in the shop or on the job, and if cooking of any kind has to be done, either boys or a labourer would be told off to assist in making the necessary preparations. Tea or supper are home meals.

As regards character, there is testimony to improvement on almost every hand. Among some sections there is still much drinking, but there is a consensus of opinion that temperance, especially among the younger men, is making rapid strides. The scattering of the men to their homes, instead of an adjournment to a neighbouring public-house after pay-time, is mentioned as illustrating this, and the way in which the carpenters and joiners managed to keep their heads above water during the six months' strike in 1891 is cited as a further proof. But though, on the whole (for two

* In a book of accounts kept for us by a plasterer's labourer, 7*d* is a daily entry, from Monday to Friday, for "husband's dinner."

or three trades are mentioned as exceptions), the forethought, intelligence, and temperance of the members of this group are steadily increasing, it is said that betting and gambling are becoming in this, as in other trades, more common practices. It is to be hoped that the more subtle virus of this pleasure will not so spread as to counteract the advances made in other directions.

Otherwise the future makes for improvement. Better education, greater facilities for rational enjoyment, increasing political power, and the responsibility for the management of their own organizations, must all exercise a beneficial influence.

The day of simple industrial forms has passed, and great firms, highly specialized skill, and sharply differentiated groups, are the dominant characteristics of the trade to-day. But though forms have changed since the days when the craftsmen, with patient persistence, worked at one long task for years, the great responsibilities of the trade are the same. It still gives us our homes, our public buildings, our churches, and our schools, and a justifiable pride will perhaps, some day, in spite of the friction and misunderstandng and sharp practices of the moment, again fill the hearts of those who have made, and still must make for us our cities.

[Mr. Aves desires to acknowledge the assistance rendered to him by Mr. Percival B. Allen in collecting information concerning the Building Trades.]

Working Rules for the Building Trades of London.

Working Rules for all Trades except Plumbers.

1. That the working hours in summer shall be fifty per week.

2. That during fourteen weeks of winter, commencing on the first Monday in November, the time shall be worked for the first three weeks eight and a half hours per day; during the eight middle weeks eight hours per day; and the three following weeks eight and a half hours per day.

3. That the present rate of wages for skilled mechanics and labourers shall be advanced one halfpenny per hour.

4. That overtime when worked at the request of employers, but not otherwise, shall be paid at the following rates, namely:—From leaving off time until 8 P.M., time and a quarter; from 8 P.M. to 10 P.M., time and a half; after 10 P.M., double time. No overtime shall be reckoned until each full day has been made, except where time is lost by stress of weather. On Saturdays the pay for overtime, from noon to 4 P.M., shall be time and a half; and after 4 P.M., and on Sundays, double time. Christmas Day and Good Friday shall be paid for the same as Sundays.

5. That employers shall give one hour's notice or pay one hour's time, on determining an engagement. All wages due shall be paid at the expiration of such notice, or walking time if sent to yard.

6. That men who are sent from the shop or job, including those engaged in London, and sent to the country, shall be allowed as expenses 6*d* per day for any distance over six miles from the shop or job; exclusive of travelling expenses, time occupied in travelling, and lodging money.

7. That payment of wages shall commence at noon, or as soon thereafter as practicable, on Saturdays, and be paid on the job. But if otherwise arranged, walking time at the rate of three miles per hour shall be allowed to get to the pay-table at 12 noon.

8. That employers shall provide, where practicable and reasonable, a suitable place for the workmen to have their meals on the works, with a labourer to assist in preparing them.

9. That wages earned after leaving-off time on Fridays and Saturdays only shall be kept in hand as back time.

10. That the term "London district" shall mean twelve miles radius from Charing Cross.

11. That six months' notice, on either side, shall terminate the fore-

going rules, to expire on the 1st of May. The foregoing rules shall come into force on the first Monday in November, 1892, but the increase of pay to bricklayers shall commence from the first week in July.

Working Hours for all Trades except Plumbers.

For Fourteen Winter Weeks.

For three weeks commencing the first Monday in November.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 12.30 P.M. to 4.30 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-seven hours per week.

For the next eight weeks.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 12.30 P.M. to 4 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-four hours and a half per week.

For the following three weeks.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 12.30 P.M. to 4.30 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-seven hours per week.

For Thirty-eight Summer Weeks.

First five days of each week, 6.30 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 1 P.M. to 5 P.M.

Saturdays, 6.30 A.M. to 8 A.M.; 8.30 A.M. to 12 noon. Equal to fifty hours per week.

Masons and joiners in shops to have one hour for dinner all the year round, and work half an hour later than the time specified for the winter months, thus making the same number of hours as worked outside on jobs, namely as laid down in Rule 2.

Carpenters and joiners who are in receipt of full wages, and who have been employed for two hours less than the hours mentioned above, shall on discharge receive one hour's notice, to be occupied, so far as practicable, in grinding tools, with one hour's pay in addition.

Working Rules for Plumbers.

1. That the working hours in summer shall be forty-seven hours per week.

2. That during fourteen weeks of winter, commencing on the first Monday in November, the time shall be, for the first and last three weeks, forty-four

and a half hours, during the eight middle weeks forty-two hours per week in all cases where the other trades cease work at 4 P.M.

3. That the present rate of wages for skilled plumbers shall be advanced one halfpenny per hour from the first Monday in November 1892.

4. Payment for overtime and all other rules to remain in force as at present.

WORKING HOURS, &c., FOR PLUMBERS.

For Fourteen Winter Weeks.

For three weeks commencing the first Monday in November.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 1 P.M. to 4.30 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-four and a half hours per week.

For the next eight weeks.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 1 P.M. to 4 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-two hours per week.

For the following three weeks.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon, 1 P.M. to 4.30 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-four and a half hours per week.

For Thirty-eight Summer Weeks.

First five days of each week, 7 A.M. to 8 A.M., 8.30 A.M to 12 noon, 1 P.M. to 5 P.M.

Saturdays, 7 A.M. to 8 A.M., 8.30 A.M. to 12 noon. Equal to forty-seven hours per week.

Overtime.—Plumbers being required to work overtime shall receive, from 8 P.M. to 11 P.M. time and a half; from 11 P.M. to 7 A.M. double time. Saturdays, from 1 P.M. to 5 P.M. time and a half; from 5 P.M. to 7 A.M. (Monday) double time. Sundays double time. Any plumber being discharged shall receive one hour's notice.

District and Expenses.—For plumbers the term "London District" shall mean six miles radius from Charing Cross; and any skilled plumber sent to work over four miles from his employer's workshop shall receive all travelling expenses. If sent over eight miles from his employer's workshop he shall be entitled to one shilling per day extra, with the usual allowance for

lodgings, and all travelling expenses. Should there be no accommodation for him to reach his work at 7 A.M., he shall be entitled to one shilling per day, unless he travel in the employer's time and be paid from 7 A.M.

All other rules to remain as at present in force.

ADDITION TO RULE 5 AGREED 3RD MARCH, 1893.

5A. Any workman desiring to leave work during the week shall be entitled to receive his money at 5 P.M. as provided for by Rules 5 and 7, subject to his having given the foreman notice before 12 noon.

Notwithstanding the above arrangement in the event of more than 10 per cent. of the workmen of each trade employed at the shop or job giving notice to leave during the week they shall not be entitled to receive their money until the usual time on the following Saturday.

PART II.—WOOD WORKERS.

WOOD WORKERS.

PRELIMINARY STATEMENT.

Of workers in wood—cabinet-makers, carriage builders, coopers and shipwrights—the census counts 68,075 in all, divided as to age and sex in the following manner :—

Persons represented : (A) Census Enumeration.

Enumerated by Age and Sex.

	10—	15—	20—	25—	55—	65—	Total.
Males	1212	7867	7755	36,847	4979	2424	61,084
Females	254	1666	1186	3,143	497	245	6,991
Total	1466	9533	8941	39,990	5476	2669	68,075

Of these, 40,168 figures as heads of families, and the whole population included in these families adds up to

188,537, the average numbers in each family, excluding the servants, being 4·65, as is shown in the following table :—

Persons represented : (B) Enumeration by Families.

No.	Sections.	Heads.	Total number (excluding Servants).	Per family (excluding Servants).	Servants.
10	Cabinet-makers	29,617	137,273	4·64	1420
11	Carriage Builders	6,276	28,845	4·59	257
12	Coopers and Lath-renders	2,571	12,391	4·82	54
13	Shipwrights.....	1,704	8,235	4·83	62
	Total	40,168	186,744	4·65	1793
	Servants		1,793		
	Total population		188,537		

The 1793 servants attend 7400 persons, and the remaining 180,000 persons wait upon themselves or each other. Of the 7400 of the servant-keeping class, 5000 have only one servant to four or more of those served, 1800 have one servant with less than four in family, or two servants with more than four, and 600 live in other families with two or more servants.

Of the 180,000 without servants, 50,000 occupy more than four rooms per family, or if less than four rooms, have less than one person per room ; 49,000 more live with one and up to two persons in each room. A further almost equal proportion (48,000) live two and under three in each room, about 20,000 three and up to four, and 12,000 four or more per room.

SOCIAL CONDITION OF FAMILIES OF WOOD WORKERS.

Lower Classes.	4 or more persons to a room ...	12,171 or 6·5 °/₀	16·9 °/₀	Crowded: 42·4 °/₀
	3 and under 4 ,, ,, ...	19,477 ,, 10·4 °/₀		
	2 and under 3 ,, ,, ...	48,150 ,,	25·5 °/₀	
	1 and under 2 ,, ,, ...	49,298 ,,	26·1 °/₀	Not Crowded 57·6 °/₀
Central Classes.	Less than 1 person to a room ...	5,488 ,, 2·9 °/₀	29·3 °/₀	
	More than 4 rooms	44,749 ,, 23·7 °/₀		
	4 or more persons to 1 servant ...	5,073 ,, 2·7 °/₀		
Upper Classes.	Less than 4 persons to 1 servant, and 4 or more to 2 servants ...	1,822 ,,	1·0 °/₀	
	All others with 2 or more servants...	516 ,,	0·3 °/₀	
	Servants	1,793 ,,	0·9 °/₀	
		188,537	100 °/₀	

Social condition (by Sections).

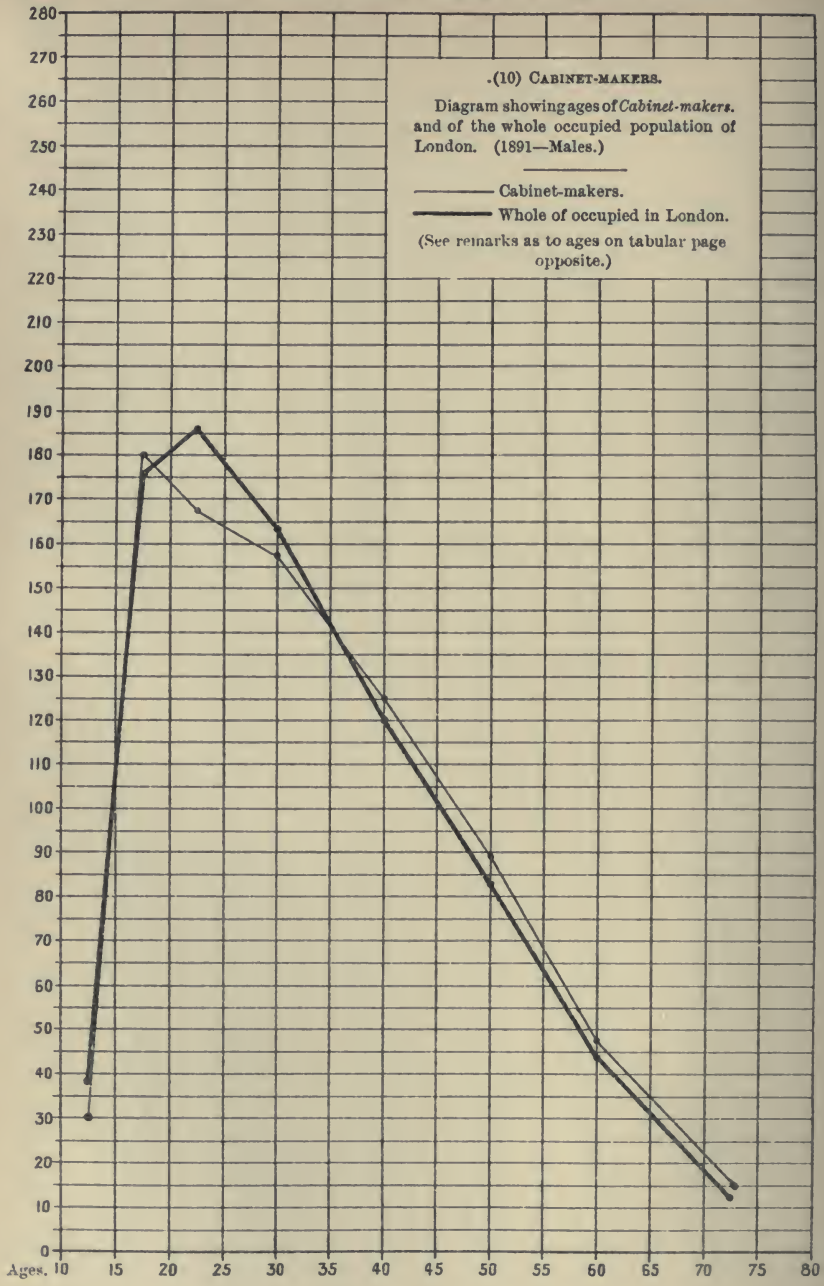
Sections.	3, 4, or more persons to a room.	2 and under 3 persons to a room.	1 and under 2 persons to a room.	Less than 1 to a room. More than 4 rooms, or 4 or more persons to 1 servant.	Less than 4 persons to a servant.	Servants.	Total.
Cabinet-makers	26,071	36,715	34,519	38,122	1846	1420	138,693
Per cent.....	19	26½	25	27½	1	1	100
Carriage builders	3786	6913	8225	9558	363	257	29,102
Per cent.....	13	24	28	33	1	1	100
Coopers	1413	3065	3722	4130	61	54	12,445
Per cent.....	11	25	30	33	½	½	100
Shipwrights	378	1457	2832	3500	68	62	8297
Per cent.....	4½	17½	34	42	1	1	100

CHANGES SINCE 1861 IN NUMBERS EMPLOYED.

	1861.	1871.	1881.	1891.
Cabinet-makers	45,200	51,400	46,200	52,600
Carriage builders	8,100	8,600	9,100	9,600
Coopers	5,400	5,400	5,100	3,600
Shipwrights	8,300	6,200	5,300	2,300
Total	67,000	71,600	65,700	68,100

It will be seen that on the whole the numbers have remained nearly stationary. A small growth in the cabinet-making and carriage building trades is balanced by a decrease in the two other sections. This decrease, considerable enough among the coopers, assumes still more serious proportions amongst the shipwrights, of whom the number counted in 1891 are not much more than one-fourth of those counted in 1861.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER I.

CABINET-MAKERS, &c. (*Section* 10.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Cabinet-mkr.	4058	4115	20,742	2952	31,867
(2) Wood-carver	901	998	3595	540	6,034
(3) Carver and Gilder	154	595	2695	474	3,918
(4) Basket worker	567	245	1125	201	2,138
(5) Cork, Bark, &c.	1103	1021	2080	320	4,524
(6) Sawyer	—	544	2124	377	3,045
(7) Funeral furnisher	50	109	742	185	1,086
TOTAL....	6833	7627	33,103	5049	52,612

The number of girls and young women employed is noticeable. Nearly half are under 25. The ages of the males employed do not differ much from those of the whole occupied population. (*See* diagram.)

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
18,768	14,850	8,523	10,471	52,612

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Upholsterer, Screen-maker, fret-cutter, French polisher, paliasse and mattress maker, carpet planner, chairmaker.
(2) Wood turner, beer stand, bread platter, bowl, broom-stick maker, box-maker.
(3) Frame and mirror maker, canvas strainer, looking-glass silverer, beveller.
(4) Bamboo, osier, twig, rush worker; straw envelope, bottle-case maker.
(5) Life-belt, air-tight stopper maker, tan dealer, broom, clothes peg, garden seat maker. Hat block, coat bust, wig block, engravers' block maker. Wood chopper.
(6) Saw-mills machinist, moulding maker.
(7) Coffin-maker, undertaker.

Enumerated by Families.

Sex	Males		28,484	Heads of Families, 29,617.
	Females.....		1,133	
Birthplace	In London	68%	20,059	
	Out of London..	32%	9,558	
Industrial Status.	Employer	13%	3,716	
	Employed.....	73%	21,871	
	Neither	14%	4,030	

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	29,617	30,129	77,527	1420	138693
Average in family ..	1	1·02	2·62	·05	4·69

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	26,071	18·8
2 & under 3 ,,	36,715	26·4
1 & under 2 ,,	34,519	24·9
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	38,122	27·5
Less than 4 to 1 servant, and 4 or more to 2 servts.	1,407	1·1
All others with 2 or more servants ..	439	·3
Servants.....	1,420	1·0
	138,693	100

	Inner.	Outer.	Together.
Crowded ..	55%	33%	45%
Not ,, ..	45%	67%	55%

DISTRIBUTION.

East	Inner 45,968	Outer 3,773	49,741
North	Inner 10,128	Outer 28,799	38,927
West	Inner 1,938	Outer 10,409	12,347
Central	Inner 9,315		9,315
South-East	Inner 2,048	Outer 9,830	11,878
South-West	Inner 8,586	Outer 7,899	16,485
			138,693

Inner 77,983, or 56 %
Outer 60,710, or 44 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employer. Male.	Employer. Female.	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither. Male.	Neither. Female.	Total.
(1) Cabinet-maker, upholsterer, &c.	2536	109	4115	18445	3611	2714	338	31,867
(2) Wood-turner and wood-box maker..	271	7	739	2075	854	345	20	4311
(2) Wood-carver	120	—	259	1088	18	236	2	1723
(3) Carver and gilder	412	14	595	2324	119	432	21	3918
(4) Willow, cane, rush, basket worker ..	121	22	245	914	592	291	153	2138
(5) Cork, bark-cutter, worker	55	2	228	513	204	45	11	1058
(5) Others in wood, cork, bark, &c.	154	13	793	1270	826	363	47	3466
(6) Sawyer.....	77	—	544	2375	—	49	—	3045
(7) Funeral furniture maker, undertaker	288	25	109	511	21	128	4	1086
	4034	192	7627	29,515	6045	4603	596	52,612
TOTAL.....	4226		43,187			5199		

Proportion of Employers to Employed: 1 to 10 (being 8½ males and 1½ females on average.)

Cabinet-making Trades.

The trades included in this section find employment for 52,612 persons, and those of them connected with cabinet-making (including the sawyers) account for no less than 40,946 persons. About 40 per cent. of the cabinet-makers, chairmakers, wood-carvers, and turners live in East London, and the rest are to be found mostly in North London. As regards East London (where so much of this trade is carried on) a full description of these industries has been given in Volume IV. That description applied to 1887, and it will not be necessary now to do more than note some changes which have taken place since that time, to make a comparison between the furniture trade in East London and that of other parts of London, and to add an account of some subsidiary trades which in East London called for no particular mention—such as carvers and gilders, funeral furnishers, basket-makers, cork and bark workers, and box-makers.

The furniture trade of East London was, and still is, largely concentrated near Curtain Road, and spreads thence northward and eastward into Hoxton, Shoreditch and Bethnal Green, with a gradually decreasing density as the distance from the centre increases. This trade (readers may remember) was characterized by specialization in the kind and quality of the articles produced, coupled with great complexity in the methods of work, making classification difficult. The establishments varied from the large warehouses of the dealers and the workshops of the few large employers, through all grades down to the "garret" of the small man working alone or with only a boy to assist him; and there was no less, though not a strictly parallel, variety in the quality of the article produced. Two general features stood out prominently and were perceived to be inter-connected: (1) the prevalence of the

small system of manufacture*: (2) a tendency towards concentration of the wholesale trade in the hands of a few large firms.

The existence of a market in which any finished article can be sold at some price—even late on Saturday to provide Sunday's dinner, or early on Monday to furnish money for more wood—the competition amongst themselves of small employers, whose numbers are for ever recruited by the ease with which under such conditions a "man" becomes a "master"; and the necessity, pressing on such men, of finding some sort of a livelihood from week to week; all these causes taken together have led to highly specialized work, both masters and men employing such skill as they possess, in making as rapidly as possible those articles for which there is a sure sale, even though at prices leaving continually a smaller margin for profit, rather than those from which a larger but less immediate return might be anticipated. The work done on these terms is not only specialized but tends also to be speculative; made, that is, in anticipation of the demand of the wholesale houses, and thus always at a disadvantage in selling. This state of things we found to be characteristic of the trade.

These conditions still exist in East London with little difference. Wages since 1887 have undergone some slight changes which will be noted later. The position of the dealers in Curtain Road is stronger rather than weaker. For though an increasing number of buyers attempt to evade the "middle man" by going direct to the makers, still the small makers (at all events those of them who cannot polish their work, or supply marble and glass, and undertake the packing and dispatch of the goods) are necessarily dependent on the dealer.

* Even in saw-mills, where the trade is apparently on a large scale, the floors of the work-room will often be sub-divided and occupied by small masters working on their own account, employing a few men, and paying rent for bench room and the use of power.

In the West End trade the employers have a staff of men capable of producing the best articles in whatever form will suit the tastes of their customers, and the bulk of the work is done to order. Midway between the East End and West End systems, and combining some features of each, are what are termed trade or piece masters' shops. The district adjoining Tottenham Court Road is the chief seat of this class of establishment. In such shops the materials and workmanship may be as good as any, but as they find their market with the dealers and in the provinces, cheap production is essential. The furniture is made in quantities with sub-division of labour—skilled men being employed for the more difficult parts only, learners and improvers doing the rest. Each of these three systems has its own method of remuneration. In the East End piece-work prevails, while in the piece masters' shops the men are paid by the hour. In the West End we find payment by the piece usual for the work done in the shop, but if men are sent out they are always paid by time. Some firms pay for everything by the hour.

It must not be supposed that the localization of any variety of a trade is strictly defined, or that all in any district conform to the prevailing type—or, indeed, that the types do not shade off from one extreme to another. There is, however, a general gradation from East to West; so that travelling westward an observer can trace a continual rise in the character of the finished article and, parallel with this, in the well-being of the workman. As an exception to this rule, however, some of the large furniture factories in Finsbury might be instanced, where the men are as highly skilled and as well paid as in any of the West End houses.

The importance of the West End shops in the trade has been declining for some years, and there are few, if any, employing more than fifty men even when busy. The men working in these shops are the pick of the trade. The work

is so varied that two articles are seldom made alike, and each workman must be able to carry a job right through, working to a pattern or drawing, and, it may be, at the same time introducing some modification that is required. The work is always supposed to be entirely done by hand, but the influence of the more rapid methods of machinery begins to make itself felt.

The piece masters' shops are mostly of medium size, and one where more than twenty men are employed is reckoned large. This number of men would include carvers, fret-cutters and polishers. The employer is always himself a practical workman, and more often than not has learnt his trade out of London, in Scotland or in the Provinces. Most shops have some special article which they manufacture in considerable quantities; one will make overmantels and cabinets; another, some particular kind of table; whilst a third may specialize in clock cases. As soon as any new style is copied and becomes common some alteration must be made. It is only by specialization and the frequent production of novelties (or their prompt imitation), that a place can be maintained in the competition. It is said that the extension of the trade of these shops has diminished the power of the dealer. They become widely known in connection with their speciality, and increasingly receive direct orders. In the larger shops of this type there is a great deal of machinery; circular, band and fret saws are extensively used, as well as other forms of machinery enabling the workman to cut and repeat patterns of the highest degree of intricacy.

Wages in West End shops are 9*d* to 1*s* per hour, most of the men receiving the lower figure. Piece prices are agreed upon between masters and men. At one time prices were fixed for each *part* of an article and a copy of a price book on this system, dated 1788, is still in existence; but probably the work became too complicated for this method, and now the price is fixed for each complete article

and a fresh bargain continually made. In many firms there is a shop committee to act for the men in this matter.

In the piece masters' shops, good workmen may receive 9*d*, and a few get 10*d*, but the larger number are paid 8*d* an hour. No definite task is fixed, but a man's work is watched closely, and if the output be not up to the employer's standard, dismissal will follow. On first engagement a man would state what rate of pay he wanted, and a test job would decide whether he was worth the price he asked. In some of the shops of all grades what is called the "lump work"* system prevails. Under this plan the earnings in particular weeks would be greater than that of time workers, but the average, one week with another, would be no higher, if so high. The earnings of first-class cabinet-makers in these shops, whether paid by time or not, may be reckoned at from 40*s* to 47*s* a week in full work, and those of ordinary men average from 30*s* to 36*s*. There are also under each piece master a number of apprentices and improvers, apprentices earning from 5*s* to 12*s* 6*d* a week, and improvers from 18*s* to 20*s*. The proportion of such young men is often large. In one shop employing seven journeymen there were two apprentices and one improver; in another with only five men there were three apprentices and two improvers.

Earnings in the West End and Tottenham Court Road districts are more regular than in the East, and, with the exception of the improvers in the piece masters' shops, higher also.

The hours of work vary from fifty-two to fifty-six per week, fifty-two and half or fifty-four hours being the most usual. Work commences at 8 or 9 o'clock, ten minutes is allowed for lunch at about 10.30; one hour for dinner and

* Originally the term "lump work" was applied to large jobs, such as wardrobes, which were given to a number of men at a fixed price; these men working together and sharing the proceeds. Now it is often used more loosely for all piece-work in which the price is fixed for the finished article.

half-an-hour for tea, work ceasing at 7 or 8 P.M., and on Saturdays at 1 o'clock. Some shops start earlier (7 A.M.) and stop half-an-hour for breakfast, but employers are finding it better not to begin till after breakfast. Much work is not done before the morning meal, and, on the whole, as much is done in less time by starting at the later hour, with the result of a saving in incidental expenses.

Methods of learning.—Excepting in the piece masters' shops there are few apprentices. These shops are the chief training ground for London, as, in addition to apprentices and improvers, they find work for many men who, coming from the provinces or Scotland, need to gain a few years' experience of London ways before they are fit to take up responsible work. These men become the best workmen in the trade. Boys also assist relatives employed on piece-work, and thus acquire a knowledge of the trade.

French Polishers.

Largely as a result of their own efforts, the position of these men has been considerably improved since 1887. Their trade organization has been strengthened by an amalgamation of local unions, and the percentage of unionists is now greater in this than in any other branch of the cabinet-making trade. In nearly all the West End shops the men employed at this work are unionists, and it is difficult for a non-unionist to obtain work in them. The minimum wage has been raised from 7*d* to 8*d* per hour, and overtime rates have been increased: for the first two hours, time and a quarter is charged; for the next two hours, time and a half; and for any time over four hours double rates are obtained. The working hours are usually fifty-five and a half, but are reduced to fifty-two and a half, in harmony with Building Federation rules, if the work is done for building firms—as in shop and office fittings. Very few men are paid above the minimum rate (8*d*), and outside of the union 7*d* per hour is more

usual. From this rate there is a descending scale to the low wages of improvers and boys. Thus in one small shop there were two men at 7½*d* per hour, one at 5½*d*, and two improvers earning respectively 11*s* and 9*s* a week. Good workmen when fully employed will make from 32*s* to 37*s* a week, but much time is lost in some instances through seasonal variations in the amount of work offering. The best hands have as usual the most regular work. One man working for a well-known firm stated that he had not lost any time during two years, and in all twelve men had perfectly steady work. The irregularity falls to the lot of the extra men employed at busy times, when double the regular working staff is not unfrequently needed. Other men seen had lost two months, and another as much as five months out of the year, and six or seven weeks out of work would not be unusual. In a cabinet-maker's shop where the polishing was done by contract, the man who undertook the work would when busy employ two or three assistants, but when slack would work single-handed. Thus he might perhaps work longest and hardest in the off season, with the result that the entire disadvantage of irregularity would fall on those he employed. The unions do not object to this system of contract, and two of them admit employers as members, thus providing for men undertaking work in this way, who must be considered as employers rather than employed. It is said that higher wages are to be had from these workmen-masters than from employers who do not contract. It is probable that in return rather harder work is done.

Glass Bevelling.

Mirror-making is a portion of the cabinet-maker's trade, and glass-bevelling is one of the operations involved. Besides "bevelling" (a term which is pretty well understood as the taking of an edge or upper corner off the face

of the glass) the work consists of "cutting," "siding," "silvering," and "fitting"; all distinct branches of work, but so generally carried on in the same factory that the men employed in these various ways have been definitely included in one union.

Bevelling itself is not the most agreeable work, being cold as well as wet. A beveller holds the glass and presses its edge first against an iron grinding mill or wheel, upon which a mixture of sand and water constantly plays, and then against a revolving stone upon which water trickles. This removes the roughness left by the first process. The final polish is given by another wheel of wood, covered with polishing material. The difficulty lies in grinding the edge exactly even from end to end of the sheet of glass. The broader the bevel, the greater the skill required.

There are two classes of bevellers:—1st, Shape workers, being those who follow curves and other elaborate shapes with their bevelling. They are the most highly skilled, and working on time make 10*d* to 1*s*, or even more, per hour, and average from 42*s* to 45*s* per week throughout the year. 2nd, Straight workers, whose task is much simpler, being confined, as the name implies, to plain edges. Payment is by the foot, at prices agreed upon between the union and employers, ranging from 1¼*d* to 1*s* 10¾*d* per foot, according to the depth and breadth of the bevel, for a "ten foot run," *i.e.* for up to ten feet of bevel measured on the sides of one piece of glass. When the length of bevel measured in this way exceeds ten feet, the charge is increased ½*d* per foot. The wages of straight workers average about 36*s* per week.

Before the glass comes to be bevelled it goes through the hands of the cutter, who makes it of the required size and shape, and after it has been bevelled it passes to the "sider," who cleans up the plates and prepares them for silvering. It used also to be the duty of the "sider," as the name implies, to look out for flaws in the glass, and decide

which surface is to be front and which back. This work, by whomsoever done, precedes bevelling. Cutting requires a certain skill, and those who undertake large mirrors can command 40*s* or 42*s* a week. Siders earn about 30*s* on the average.

After the plate-glass has been bevelled and cleaned up, it is passed on to the silverers, who convert it into a mirror by the application of silver, reduced by admixture with different chemicals. Quicksilver itself is no longer used. This is somewhat delicate work, as any flaw or speck upon the silver will become visible in the course of a short time on the face of the mirror, and the glass may then be returned to the maker for re-silvering at his charge. Silverers work by time, and their wages vary according to skill from 30*s* to 40*s*. They are generally assisted by a "wetter off," who ranks as an unskilled labourer, and is not admitted into the union.

Silverers, and indeed all the time workers in this line, are said to obtain more constant employment than bevellers, and to be also more regular in their work and in their habits.

The best "fitting" is done by cabinet-makers. The fitters employed by looking-glass manufacturers are usually engaged upon common toilet mirrors. Fitters can generally do some cutting if required, and the two branches are to some extent interchangeable. Minimum union rate of wages for best hands, 35*s*, with a second grade at 32*s*. "Toilet" hands or improvers, 25*s*.

The hours of work usual in the trade, and acquiesced in by the union, are fifty-four per week. When overtime is worked it is sometimes paid at time and a quarter, but there is no rule. For busy and slack seasons the bevellers and their mates depend upon the ups and downs of the cabinet-makers' trade; but the factories do not leave off working, and men are rarely discharged. In small shops men will shift from branch to branch, and undertake siding or silvering, cutting or finishing, as required. This elas-

ticity, however, is not in accordance with union rules, and apprentices are not supposed to learn more than one branch. The bevellers shift from shop to shop more frequently than men in other departments.

With the first cheapening of plate glass, and the consequent more common use of mirrors in furniture of all sorts, the whole trade increased enormously, but during the last two years, although the price of glass has fallen faster than ever, the London trade has remained stationary.*

No complaint is made as to unhealthiness in this trade. Silvering, when mercury was used, was an injurious process, but is now as little dangerous as any other branch. The usual age for loss or diminution of wage-earning capacity is set down at fifty-five for silverers, cutters, and fitters, and rather earlier for bevellers, because the cold, wet process, inter-connected with drinking habits, induces rheumatism.

Wood Turners.

The greater part of these men work in the saw-mills and cabinet workshops in the East End, and an account of them may be found in an earlier volume. The only change requiring notice is a decision in 1893 under the Truck Act, by which a deduction from men's earnings for use of steam-power was declared illegal, and to this extent the men have benefited, as wages have for the most part been maintained at the previous rates.

Wood Carvers.

There are 1723 persons returned under this heading in the census, of whom half live in the East End, and more than half of the remainder in North London. The work

* There is competition between English glass and that made in France and Belgium. The foreign glass is not only cheaper to produce, wages being lower where it is made than in Lancashire and Yorkshire, but is said to be purer and whiter in colour, because of some superiority in the material available.

throughout is performed both on time and piece, the men preferring the former. The minimum wage recognized by the union is 10*d* an hour, or 1*d* more than for cabinet-makers. Well-skilled men usually earn 1*s* an hour, or even more, according to the ability of the worker. In the West End shops the minimum is maintained, but this is not so in the East, where lower—and sometimes much lower—prices are accepted for work of a rougher description. A good deal of the commoner work consists only of "finishing" and completing the patterns after the operations of the band and fret-saw. The best shops work forty-eight hours; in others, the carvers conform to cabinet-maker's time.

Lads are still apprenticed, but not to the same extent as formerly; technical education is, however, doing something to raise the standard of excellence in work. A class was organized by the Institute of British Wood Carvers (an association for the advancement of the trade generally), and this class is now carried on by the Carpenters' Company. Wood-carving, also, is usually on the curriculum of Polytechnic and other institutions in which manual instruction is given. Men cannot continue carving to any great age, or at least when in years must confine themselves to coarse work, at low pay, as eye and hand fail early.

Carvers and Gilders.

We have already dealt with wood-carvers, and shall shortly deal with gilders. The combined name has a special significance as applying to *picture-frame makers.* This title is still to be seen on the name boards, and on the billheads of all shops where picture frames are made or sold, and formerly carving and gilding was the most important part of picture-frame making. The workman in those days did actually carve and gild. He often made the frame, carved the ornament, and laid on the gold leaf. But this is all changed. A man who is both a carver and

gilder is rare. Some of the older men were apprenticed as such, but even in these cases the man usually works at one branch now.

The change is not due solely to division of labour in the shops, but more largely to the introduction of machine-made mouldings, which, for ordinary frames, have superseded the old hand-work. Of these large quantities are imported; the cheap mouldings from Belgium and Germany, and those for the best work, which are well designed and finished, from France.

The men who now make picture frames are known in the trade as joiners, fitters up, preparers, moulders, and mounters. In shops doing best work, the joiner prepares the wood, gluing together two or more pieces to make the desired moulding, then cuts it up and mitres the corners, so forming the frame. For ordinary work, he has merely to cut up the imported moulding and fasten the pieces together, the skill required for this operation being small. Accordingly, two classes of men are found doing the work: the skilled joiners (a limited number), who are paid 8½*d* or 9*d* per hour, working fifty-two and a half to fifty-three and a half hours a week, and whose average wage may be taken at 36*s*; and the men who put together the common frames, who are not nearly so well off, working fifty-four to sixty hours a week for a good deal less money, piece prices being paid. These vary with the width of the moulding. For joining an half-inch moulding the man would get 4*s* per gross of frames, while for a 3-inch moulding the price would be 2*s* 6*d* per dozen. The fitter up cuts the glass, puts in the picture and the back, and completes the frame for sale.

The "composition workers," as the preparers, moulders, and mounters are termed, are only found in shops of the best class, and often one person does all this work. The preparer covers the moulding with a layer of paste, in which whiting and size are the chief ingredients; the

moulder prepares, and the mounter affixes the ornaments to the frame. These ornaments moulded out of a mixture of glue and resin, with sufficient whiting to form a stiff paste, are, while still flexible, affixed to the frame, adapting themselves to the curves of the moulding, and solidify into a brittle yellowish substance. Moulders earn $8\frac{1}{2}d$ or $9d$ an hour, and some as much as $10d$.

Employment is uncertain, for the use of foreign mouldings has caused a shrinkage in the amount of work offering, with the result that men have taken up kindred branches of industry; and we find men, who in early life were exclusively engaged in the picture-frame trade, turning to other branches of work. Thus composition moulders and mounters also seek work with house-decorating firms, moulded ornaments being used for overmantels, dados, and ceilings, wherever panels may be attached, whilst the joiners or fixers, as they then call themselves, supplement their work by affixing these ornaments in the houses. At the present time these composition workers and fixers have a grievance against the fibrous plasterers, who also claim to prepare and affix such ornaments.

Mount cutting has also become a special branch, the picture-frame maker finding that he can buy mounts cheaper than he can cut them.

Gilders.

If it were not for their connection with picture frames, and hence with carvers, it is probable that these men would be classed with painters and decorators. Their work includes three principal groups: (1) Gilding picture frames, or the frames of mirrors, &c. (2) Furniture gilding, chairs, fancy cabinets, &c.; and (3) Decorative gilding, which consists in the adornment of ceilings and panels in the interior of buildings, or the production of patterns and lines on the ornamental stone or iron-work of the exterior.

For this purpose gold is much used in hotels and restaurants, theatres, and places of public resort generally.

It is not possible to say positively how the men who do decorative gilding will have returned themselves for the census. If as "gilders" only, they will be found with the carvers in this section; if as "decorators" or decorative gilders, they would be placed with "painters and decorators." While the carvers and gilders claim, and still execute, a proportion of decorative work, the greater part has been lost to them, having passed gradually into the hands of painters and decorators. Men who used to be known amongst the painters as "pencil hands" now do the work. The transfer has come about very naturally, employers preferring to have the finishing touches added by men who had done the work from the beginning, and who, moreover, were already competent, or could very quickly learn, to perform it.

Gilding may be done either with oil or water, according to the material upon which the gold is laid. In either case a coating of size is the basis; to this, when moistened with water, the gold leaf will adhere. For oil gilding the size is covered with a coating of ochre and linseed oil, and this on drying provides a sticky surface for the gold, and when quite dry becomes perfectly hard. The gold may then be burnished, or else a flat or "matt" finish is given by another coat of size. The method of finishing is applicable to both oil and water gilding. Decorative work is usually done in oil. For furniture, water gilding is used, sometimes burnished and sometimes not. For picture frames both methods are employed.

Hours of work for gilders vary from fifty-two to fifty-eight a week. As they form usually only a small proportion of the men employed, their time is accommodated to that of the shops at which they happen to be working. In picture-frame shops fifty-six and a half hours are usual, *i.e.* 8 A.M. to 7.30 P.M., with an hour for dinner and half an hour, or sometimes

fifteen minutes, for tea. The large decorating firms work shorter hours, adopting those of the Building Trades' Federation.

Most of the men earn 8½*d* an hour. This was formerly the trade society minimum, but the restriction was abolished to enable men working at lower rates to join the organization. There are a few men receiving as little as 6½*d* per hour, but 7*d* to 9*d* would include nearly all. Men in regular permanent employ are comfortably off, but few are so fortunate. As a rule they seldom remain long in one shop, but pass elsewhere in pursuit of work every few months, or even days, losing time at nearly every change. The record of the time worked by two men from January to November, 1894, shows this. These examples, taken at random from the unemployed book of the Amalgamated Society of Gilders, are two out of many, and not the worst cases. The men are described as "fairly good men," and may at any rate be accepted as representing an average, and not as selected in any way; except so far as selection is implied by their names being on the unemployed book at all.

A.				B.			
Commenced Work.	Finished Job.	Days Worked.	Out of.	Commenced Work.	Finished Job.	Days Worked.	Out of.
Jan. 17.	April 24.	84	148	Jan. 25.	Feb. 8.	13	29
July 9.	Aug. 15.	33	44	Feb. 28.	Mar. 6.	6	6
Aug. 29.	Sept. 11.	12	16	Mar. 6.	April 21.	40	41
Sept. 17.	Sept. 28.	11	18	April 24.	April 27.	3	27
Oct. 8.	Oct. 22.	13	24	May 25.	May 26.	2	21
Nov. 5.				June 19.	June 23.	5	42
				Aug. 7.	Aug. 18.	11	18
				Aug. 28.	Sept. 15.	17	21
				Sept. 21.	Oct. 27.	32	36
				Nov. 2.			
		153	250			129	241

Thus out of a possible 250 days A only worked 153, losing 97 days or 39 per cent; while B worked only 129 out of 241, losing 112 days or 47 per cent. Assuming that

they worked full time when employed, setting short time against overtime, an assumption which is probably strained, their average weekly earnings could not exceed 25*s*. Another gilder, experienced in all parts of the trade, has kept an account of the time he has worked for a series of years, as follows :—

Year.	Days Worked (out of a possible 308.)	Year.	Days Worked (out of a possible 308.)
1869	252	1882	46
1870	243	1883	139
1871	265	1884	35
1872	245	1885	24
1873	237	1886	186
1874	192	1887	151
1875	249	1888	72
1876	256	1889	232
1877	151	1890	181
1878	221	1891	106
1879*	10	1892	212
1880	85	1893	174
1881	46	1894	89 (up to Dec. 1)

As the man is now advanced in years, some of the lost time may be due to the disadvantages of age, but he does not think it is so, and says he is not worse off than others. There seems little doubt that most of the men would be better off, and many of them very much so, with 25*s* a week regularly, than with the earnings they make at 8½*d* an hour; and this may explain why some men are willing to work at 7*d*, or even less, with a prospect of regularity of employment to compensate for the reduced rate.

There are some perquisites called "skewings," consisting of waste gold leaf wiped off from the gilding of irregular or ornamental surfaces. This is carefully swept up and preserved, and twice a year, usually at Christmas and at the time of the beanfeast, is taken to a refiner and sold. The amount received is trifling, but the men cling tenaciously

* In 1879 and the following years this man was boycotted for taking an active part in the re-organization of the trade societies. During these years he occasionally worked on his own account.

to the custom. A number of women are employed on piece-work. They are paid 1*s* 3*d* per book of leaf, and can earn about 4*d* per hour.

The busiest time is from January to June. During July and August trade is very slack, after which there is an increased demand until November, when it again falls off. There is very little overtime to compensate for loss of wages in slack time, and the men themselves are opposed to it. July and August are busy months with decorators, and some of the men we are describing may find work in this way—a kind of retaliation for the gilding work which has passed into the decorators' hands. There are few boys entering the trade now. Apprenticeship has practically died out.

Upholsterers.

The divisions noted as to cabinet-makers are applicable to upholsterers also; East and West representing the extremes, while the shops of the piece masters occupy a middle place. The conditions under which the East End work is done have not changed materially since the time of our former inquiry. The commonest work consists mostly of what is known as "show wood," but the piece masters do a large proportion of "stuff over," or articles of which the wooden frame is quite or almost entirely covered. This work from the upholsterer's point of view is never quite so common as the "show wood" may be. The best work is mostly done to order, and is, as a rule, paid for by the piece. Expensive materials are frequently used in the work, and payment for labour becomes a small proportion of the total cost. The upholsterer is responsible for cutting as well as making, and must work intelligently or he would soon spoil material far in excess of the value of his labour. Consequently the price for good work is readily maintained.

For this or other reasons the upholsterers have always kept their wages at a higher level than the men

engaged in other branches of the furniture trade. In the piece master or "trade" shops the rate of pay varies from 7*d* to 10½*d* an hour, according to the ability and rapidity of the workman, by far the greater number earning 8*d* to 9*d*. The best men, losing little or no time, would maintain an average of 40*s* a week. Ordinary earnings may be taken as 36*s* when in full work, or about 32*s* allowing for lost time. West End piece workers when busy earn high wages. Almost all take over 40*s*, and many exceed 50*s*. Even £3. 10*s* would not be uncommon. It may be doubted whether these men are, on the whole, better off than those in the piece masters' shops, where, although the conditions are more stringent and the stress greater, work is more certain and more regular; but those of them who are recognized as regular hands, no doubt, have the best position in the trade, averaging 40*s*, 50*s*, and even 60*s* a week. An upholsterer of this class, working for a well-known firm, kept an account of his earnings with this firm for fifteen years, and in that time they reached the sum of £2022. In three of these years he worked some months with other firms, and for that time kept no record. Omitting these periods entirely, there remain twelve years, during which he earned £1735, or an average of £144. 12*s* per annum, or £2. 15*s* 7*d* per week. The average for different years varied from £3. 3*s* 9*d* to £2. 10*s* 5*d* per week, and the weekly earnings themselves from £5. 5*s* to (on one occasion) 2*s* 6*d*. He worked no less than six hundred weeks out of a possible total of 624 (52 × 12). Of these twelve years' earnings, £1410 was earned by piece and £325 by time. These men are often sent to work at a distance (in country houses, &c.), and are then paid by the hour at 10*d* or 1*s* an hour. Travelling expenses are paid and an allowance for board and lodging. These extras, in the case of the man we have instanced, amounted in the twelve years to £134.

West End upholsteresses earn from 15*s* to 17*s* a week,

and good hands can usually obtain employment. Of those less skilled the supply exceeds the demand.

Hours worked are practically the same as those of the cabinet-makers, and so are the *methods of learning* the trade. The men complain bitterly of the piece masters' shops for employing an excessive proportion of boys, and one of the unions has amongst its objects the reduction of the number.

Mattress and Palliasse Makers.

The manufacture of bedding, formerly a branch of upholstery, is now a distinct trade, the work being done in separate workshops by a different set of men. A number of firms have made this trade their sole study, supplying beds and bedding to the furniture dealers and upholsterers. But the boundary between mattress-making and upholstery is not always sharply defined. In some shops spring mattresses are made by the upholsterers, in others the work is given to mattress makers who count it a privilege to do it, and in others, again, it is considered to be part of their regular work. The making of cushions and chair seats is common to both sets of men, the better work done to order falling to the upholsterers, while the mattress-maker and his boys will manufacture the goods that are to be sold cheap by drapers and furniture dealers.

Old Street may be regarded as the centre of the trade in London, but there are several large shops near Tottenham Court Road, and others are scattered in the West and South. The establishments in West and South London do a larger proportion of cleaning and re-making than those more centrally situated.

Mattress-making is the more skilled part of the trade, the manufacture of spring mattresses of various kinds being the most difficult and most highly paid; hair mattresses come next, and lower in the scale those stuffed with shoddy. The work includes filling, buttoning or

tufting, and finishing. The cases or covers to contain the hair, flock, straw, or other material used, are made by women known as "machinists" or "case-makers," and the same women sew up the cases after the men have stuffed them.

Palliasse-making is heavier work. The men use a rammer to pack the straw or shavings tightly into the case. The palliasse-maker has seldom the ability to make a mattress, and the mattress-maker, even if he have the physical strength needed, will not readily accept work for which the pay is less than he is accustomed to receive.

Piece-work is the rule of the trade. In some shops, however, a system of task-work prevails; the wages in these cases are nominally 8*d* per hour, but a certain minimum amount of work must be done. This plan is adopted by firms who hold large contracts or are accustomed to make very large quantities of one class of goods. In these houses a quick workman who has finished his quantity will help his slower companion. In default of such assistance the man whose work falls short will occasionally make it right by booking his time proportionately short, *e.g.* if he really began work at 8 he would put himself down as having come at 8.30 or 9 o'clock.

The normal week consists of fifty-two and a half hours, work lasting from 8 A.M. to 7 P.M., with an hour for dinner, half an hour for tea, and a short interval for lunch at 10.30. But with the exception of the time workers, few of the men keep these hours regularly. When work is slack piece-hands will not come till 9 or 10, and then might find nothing to do. On the other hand, when trade is brisk, the factory will be opened for them at 7 A.M. The women work the same hours as the men (safeguarded always by the provisions of the Factory Acts).

A mattress-maker in full work may count on earning 45*s* a week, or more if a quick hand. The palliasse-maker would take about 10*s* less. Not many men can hope to

earn full rates except for a few weeks in the year, and a mattress-maker who averages 30*s* is considered fortunate. One firm doing a steady trade, and dividing the work amongst their workers when slack, shows a yearly average of 34*s* 9*d* for all their men, and of 12*s* 2*d* for their women (machinists). The distribution of the earnings throughout the year is shown in the following statement of average weekly payments in each month:—

Month.	Mattress and Palliasse Makers (Men).	Machinists and Case Makers (Women).
	£ s. d.	£ s. d.
January	0 19 3	0 10 10
February	1 13 8	0 12 6
March	1 12 2	0 12 0
April	2 2 0	0 12 10
May	1 17 7	0 11 8
June	1 16 0	0 12 2
July	2 2 6	0 12 8
August	2 1 6	0 13 1
September	1 9 6	0 12 1
October	1 13 1	0 11 2
November	1 12 10	0 12 7
December	1 4 10	0 11 7

While the range of earnings indicated here is wide, that of the ordinary worker is still wider. Although he may make full money in the season, he must expect to lose at least two or three days a week in the slack period; moreover he may be out of employment for several weeks together, and very glad to take any other work that offers.

The irregularity of work has increased in recent years owing to the introduction of the wire-woven spring mattress which has affected both branches of the trade. It has almost superseded the ordinary spring mattress and renders the use of the palliasse unnecessary.

Home workers.—In this, as in other branches of the furnishing trades, there are a number of journeymen working on their own account. Usually they manufacture the common kind of palliasse, filled with shavings or packing straw, *e.g.* straw which has been used for packing crates, &c. They

find their market at the cheap furniture shop, or less frequently with the wholesale houses.

Method of learning.—There is no regular apprenticeship. Lads commonly follow their father, but owing to the uncertainty of employment an increasing proportion of fathers now turn their lads in other directions, and as some employers will not be troubled to teach boys there are not many learning the trade at present. Nevertheless, the men complain bitterly of a few firms who employ a large proportion of lads; asserting that when the slack time arrives men are dismissed, and that in the following season the lads step into their places. This is possible, as, though three or four years are necessary to obtain a thorough knowledge of the trade, a smart lad can learn the ordinary work in six months.

The busy season for the whole group we have considered, from cabinet-making to mattress-making—extends from Easter to July or August. From August to Easter trade is quiet, except for a slight revival in October, and again, in some departments, at or before Christmas. Things are usually at their worst in January. In March and April orders, consequent on cleaning and refurnishing, come in, and in May the demand from the country holiday resorts makes itself felt.

Sawyers.

The majority of these men live in South and East London. In the South, the timber-yards and saw-mills are found on the banks of the Surrey Canal and near the Surrey Commercial Docks, no doubt on account of the facilities for obtaining the timber from the docks.

In the East End many of the men work on the hard woods used in cabinet-making, and a number of small employers, hiring shop-room and power, have located themselves in these establishments, so that five or six small industries are often found under the same roof. In the South the men work almost entirely on the soft woods, and although other

industries, such as box and packing-case making, and firewood chopping, are carried on, the men are all directly employed by the owner of the mill. The wages are lower than in 1889, owing to an unsuccessful strike in 1891, which brought outsiders into the trade. Previously a good sawyer could get 50*s*; now 42*s* is considered a high wage, while the average earnings would be between 24*s* and 30*s* a week. All are time workers. The men's union was destroyed in the struggle of 1891, and reorganized in the following year, but is still very weak.

Box-makers.

Wooden boxes are of all sorts and sizes, from the match-box to the packing-case, or from the roughest box in which "turkish delight" is packed to the carefully dovetailed and polished cases which are fitted up for scientific instruments.

The chief customers of the manufacturers of ordinary wooden boxes are the large wholesale confectionery, blacklead and blacking, soap or baking-powder firms. Soap-makers usually make the greater part of their own boxes, and only employ outside manufacturers when the demand for soap is brisk and their own resources are over-taxed.

Those who deal in wooden boxes are, almost without exception, themselves manufacturers. Their factories are to be found chiefly in the neighbourhood of the London canals, along which the immense loads of Swedish deal which they use can be brought up to them in barges, so as to save the greater expense of land transport.

Outside the factories the wood is stacked in winter to a great height, as sufficient stock must be bought to last for six months without any possibility of renewal in the interval. The last barge from the ship which has been lucky enough to make a third or it may be a fourth voyage during the months

in which the Northern harbours are free from ice, is unloaded during December, and after this no more can be imported until June or July come round again. The wood is not left any length of time to season, and the supply of one year is seldom more than sufficient to meet the demand of the next.

On the ground floor of the factory are the sawing and planing mills, and generally one or two "berths" for wood choppers, who act as scavengers and use up all the odd ends for firewood bundles.

The planks of deal are cut to size by the cruel circular saw (cruel inasmuch as hardly a man will be found in any shop where it is used who has his full complement of fingers) and then planed and cross-cut according to the size of box required. The men are paid by time. In the saw-mills the noise is deafening. Even for the most talkative, conversation is impossible, and each man must pay such unflagging attention to save his hands from injury, that there would be but little gain to be derived from the extra effort usually resulting from piece-work. Upstairs the boards are taken in hand by men and boys (who are all piece workers) to be there marked with the customers' name and then nailed together in box form.

Sometimes the nailing is done by machines worked by women, who simply have to place the boards in position and then press on a lever with the right foot.*

Wood box-makers when busy, *i.e.* from October to Christmas, can make from 30*s* to 35*s*, but their earnings are very irregular and drop to 15*s* or nothing when slack. One employer who in 1892 averaged out the earnings of his men, found that in spite of fair rates the weekly amount did not come to a higher sum than 21*s*. Many

* The presence of women and machines is said to be the result of an attempt of the box-makers in 1891 to obtain a rise in wages. They were out for six weeks, but were not successful.

of the men in the trade would probably earn less than this, as they are said to belong to a somewhat unsteady class, who generally keep Monday as a holiday and sometimes Tuesday also. In fact, this same employer was so ill-satisfied with their irregularity on piece-work that he offered regular weekly wages for fifty-six and a half hours' work to his box-makers, and found that the results paid him better than before. His saw-mills could be kept going regularly, and the men supplied steadily, whereas under the former system the supply of sawn boards had been either excessive or inadequate. The females employed receive the usual women's wages, varying between 10*s* and 18*s*, according to capacity.

Hours are usually from 7 till 7 for five days, and from 7 till 2 on Saturdays, out of which two hours are allowed per day for meals.

There is no regular training, and the boys who are engaged pick up the work as best they can.

The makers of wooden boxes are sometimes packing-case makers as well, that is, the makers of rough cases for inland carriage. The exact point at which a box becomes a packing-case, or a packing-case ceases to be a box is not easy to determine, and the only division that can be safely made is that of size. As in other industries, a man accustomed to large is seldom willing or able to undertake small work.

Export packing-case makers, on the other hand, are a totally distinct class of men, and stand out in sharp contrast to both wooden box and rough packing-case makers.

They are to be found chiefly in the neighbourhood of Wood Street in the City.

All their work is on time, with 9*d* an hour as the recognized rate of pay, and the regular City hours are from 6 A.M. till 5.30 P.M., of which one and a half hours are for meals; and from 6 A.M. until 1 P.M. on Saturdays.

A careful system of training in this trade is also customary. Boys are regularly indentured for an apprenticeship of five or seven years, and are in some places first put to box-making to acquire quickness. After a year at this they are moved up to regular packing-case making.

City makers generally buy their own wood from the timber merchant, and then send it out to be sawn into planks of a given thickness. These are brought to the shop, where they are "cross-cut" into the sizes for which orders have been received, and then grooved and glued, nailed together, and finished and bound with hoop iron by the skilled packing-case makers. The cases are often lined with tin; and "canister makers" to do the tin work are sometimes employed on the same premises with the case makers, but the two are quite distinct industries, and the same man never works on both wood and tin. The men, however, meet together and have a joint society known as the Wood and Tin Packing-case Makers' Society.

Match-box makers were described in the volume on East London industries.

Funeral Furnishers and Undertakers.

Under this heading and its sub-divisions, coffin and coffin furniture makers, funeral furniture and plume makers, the census includes 1086 persons, nearly all of whom are males over twenty years of age. A goodly proportion of them grow old, since out of the total, ninety-one persons are of sixty-five years and upwards.

An employer may be either an undertaker or funeral furnisher, or both.

The undertaker measures the dead body (though there are some who like to be measured while still alive), makes the coffin, or has it made, arranges with the cemetery authorities, provides the carriages and men, and accompanies the funeral to the grave. In all cases it is he who is the director of the funeral.

The funeral furnisher, on the other hand, where he is not also an undertaker, has no personal connection with the conduct of the burial. He may be a wholesale manufacturer, or a job master, providing the undertaker with coffins, carriages, and all the appurtenances of a funeral, or he may be a funeral-carriage master only. In London the usual practice seems to be for those undertakers who have not enough business to keep a stable fully employed, to make or furnish the coffins and then to apply to the carriage master, known to the trade as a "Black Master," for the hearse, &c.

Coffins are made by "coffin-makers," who belong to this industry only, and do not overlap with either carpenters or cabinet-makers. A carpenter might soon learn to make coffins, but a coffin-maker could not turn to general carpentry, though the best class of work is now more carefully done and by better men than ever before.

No great degree of skill is, however, required in the manufacture of coffins, and the men when working for an undertaker are more often chosen for other qualities than an intimate knowledge of their craft. Thus it is more important to have a strong, presentable man, with a good suit of black clothes of his own, than a highly skilled workman. And further, respectful and, if possible, sympathetic manners, are especially necessary; for future orders depend much on the satisfaction of present customers and their consequent recommendation.

Seasons.—It is a seasonal trade, and the busy time is, as would be expected, from November until April, though a sudden rush may come at any time on the advent of cold winds or fogs. What undertakers prefer is a good steady death-rate. Fluctuations annoy them, for any sharp rise in the rate is sure to be followed by a period of slackness. For instance, the influenza epidemic greatly over-worked the trade in the years 1891 to 1893. The weaker members of the community were swept away, and,

as a consequence, there is now a reaction, and this year (1894) has been one of the worst ever experienced in the annals of undertakers. This decrease in volume of business is also partly due to better sanitation, and the autumnal rise in the death-rate, which was known to the trade as the "Plum Season," is now a thing of the past.

Wages, Hours, &c.—Coffin-makers are paid from 6*d* to 9*d* per hour, depending on the class of work they can undertake. On poorer class work in the East End 21*s* to 25*s* is the usual weekly drawing, but for fairly good men on regular West End work 30*s* to 35*s* per week would more nearly represent the yearly average.

For urgent orders and in large firms piece-work is usual, and when fully employed the men can earn 35*s* to 50*s*, but since they are, as a rule, engaged for particular jobs only, the yearly average would be considerably lower.

A normal week is one of six full days. No uniformity of hours is possible, for, after the day's work is finished, the coffin must be delivered, and there is a good deal of overtime for which no extra rate is paid unless the men are kept on Sunday or for an "all night" job, when the plus given will usually depend on the generosity of individual employers.

In spite of the fact that death is certain, and that coffins can be made up for stock without fear of ultimate loss, some overtime is perhaps inevitable. There are always the inside linings, the final polishing, and the outside furniture (nails, handles, &c.), which must be attended to after the arrival of an order; moreover, time is lost, as customers are naturally unwilling to allow the undertaker and his men to cast a further gloom over the streets in which they live by a visit to their houses before darkness has set in.

There is no regular apprenticeship, and though but little skill is needed there is not much temptation for outsiders to enter the trade. Fathers generally bring up their sons

to this business, which, when all is said, is one that habit can only partially rob of its unpleasantness; and which at times is replete with horror.

Coffin-makers often accompany the funeral to the grave as attendants, but in large establishments, where this branch is kept distinct, there is a special and permanent staff of men who, when not so employed, are made useful as carriage-washers and grooms. They are paid so much per job (usually 4*s* 6*d* to 6*s*, depending on the class of funeral), and in addition a small regular allowance (about 7*s* per week), which brings up their weekly earnings, counting one funeral a day, to 33*s* or 34*s*, exclusive of tips. When busy, two jobs may be managed, and the men's money is increased accordingly. Those who get the first choice of work are known as "first turn" men. Below them come "second turn" or yard men, who are paid regular weekly wages (27*s* or 28*s*) and go out only when the "first turn" men are already fully employed.

There is also a casual class of "odd" men, employed when business is very brisk. They are paid entirely by the job, and both their earnings and habits are irregular.

Sometimes first and second turn men change about, and in this case all are paid by the job, and both sets of men average about 30*s* per week.

The proverbial joviality of undertakers' men is not so marked now as formerly. They must be steady men, we are told—"the masters' reputation depends on it." Such jollity as still survives is no doubt due to the natural reaction from the sad, and sometimes dreadful, scenes with which they are brought in contact, or to the levity which, with all of us, creeps in upon or succeeds a sustained effort after gravity of demeanour, animated, perhaps, by the gifts of customers and a share of the funeral hospitalities.

In this industry there is no organization either among the employers or employed.

General Remarks.—Coffins are mostly made of oak or

elm, and into them shells are sometimes fitted, which may be either of wood or lead, but the latter is very little used now. In other respects also funerals now involve less expense and pomp than formerly, and, as a rule, the poor pay proportionately rather more for show than do the rich. Plumed hearses are no longer used, except, it is said, by costermongers and chimney sweeps, and others upon whom ancient custom has a very strong hold. Crape and long silk scarves used formerly to be provided for all the mourners by the undertaker. This expense is never incurred now, and "mutes" are very rarely seen. On the other hand, flowers, now so usual, were then not thought of. They would have been considered Popish. They, however, are not supplied by the undertaker.

Again, burials on Sunday are now very rare, and this has prevented many men, altogether outside the business, from taking on this work as an extra. Many a young shop assistant was formerly not unwilling to take a Sunday outing in the suburbs, even though he had to get there on a hearse.

There seems to be no importation of coffins ready made from abroad. Sometimes those who die in foreign lands are sent over to be buried in England, but the superstition of sailors prevents their being shipped in anything possessing the outward shape of a coffin; they come instead in cases as pianofortes, or as "specimens in natural history."

Basket-makers.

Wicker-weaving, the mother of all forms of weaving, unlike her children, has hitherto succeeded in baffling all attempts of makers to introduce machinery. The men employed are now, as always, handicraftsmen.

In London, which is only one of the English Trade centres, shops are confined to no particular locality,

although a good many of the smaller masters are to be found in Crispin Street, Spitalfields, and in and about Tabard Street in Southwark, which is also the home of the brush-makers.

Basket-work, by which is to be understood the manufacture of anything with wicker that is not fastened with nails, has no distinct branches for specially skilled men.

In practice, the less skilled are kept on what is known as "slewed white" or "brown" work, *i.e.* the making of hampers, round market sieves, and fish baskets from unpeeled osier rods; whereas more highly skilled men earn better money on "general" work with peeled rods, which includes all fancy work in the making of chairs, wine flats, clothes' baskets and luncheon hampers, as well as laundry and dress baskets, grocers' bottle baskets, basinettes, &c., &c.

Process of Work.—Basket-makers, known to their familiar friends as "twiggies," when at work usually sit on a stout wide plank placed on the floor, and slightly inclined upwards at one end. They start on the "bottoms" of the baskets, and when making "round" goods begin by standing over their work, using both hands and feet to keep the bottoms flat. As soon as these are ready they are "staked" up, *i.e.* the upright stakes on which the sides are woven are fixed in position. This done, the man sits down on his plank and places his work on a "lap-board" in front of him. As the basket grows the lap-board is discarded, and the work is put on the plank until finally it becomes so far advanced that the man himself has to sit on a box which is placed at the higher end of his plank. This box also holds the few tools that the men require.

The rods, or cane, of which baskets are made, are well dried before delivery to the manufacturer, but must be soaked in water, before use, to make them pliable. After this, they can be bent double or twisted without breaking, and do not regain their stiffness until perfectly dry.

Basket-makers provide their own tools, which are few in number and simple in use. They consist of one or two knives for "picking" off the outside ends, a "flogger" for driving the wicker close, one or two bodkins for making the holes to insert new rods, and a pair of shears for cutting off the very stout pieces of cane used in large work. Taken together these tools would not cost over 10*s*.

Seasons.—Trade is fairly regular throughout the year for those on general work: May to December being the busiest months, and January to April the slackest. The less skilled, however, are never certain of employment, except in Summer (from April to August), when there is always a large demand for hampers and fruit baskets: and, although these can be made up for stock in slack times, not much of this is done. A stock requires too much valuable space. Thus employers prefer to give what little they do make at these times, to those of the better class workmen who may happen to be short of other work.

Wages, &c.—All work is on piece, and prices are strictly regulated by the Trade Society, which is strong, and in all better-class shops able to enforce its "list." In the smaller shops work is also on piece, but prices for the commoner goods have been cut by provincial and foreign competition, and also to some extent by home workers. Of these last there are not a great number in London, but there is always a tendency for those of the less skilled, when out of work, to earn a little during their enforced leisure by making up common stuff at home, which they afterwards dispose of for no very high price, to any grocer or basket retailer who will accept it.

As it is a piece-work industry, earnings vary with capacity. One man will make 28*s* in a week on the very same class of work, and during the same hours in which his more dexterous neighbour will earn 36*s*. Fast workers will make 50*s* when busy, but the usual average for those on general work seems to run from 30*s* to 35*s* per week,

while less skilled men, employed on "brown" work, earn 25*s* to 30*s*.

Hours vary with the amount of work to be done and the fancy of the workman. Shops are open, as a rule, from 7 or 8 A.M. to 7 P.M., and close at 2 o'clock on Saturdays; but the men seldom turn up before 9 in the morning. They take what time they like for food during the day, and spend perhaps rather longer over their meals at the beginning than at the end of the week. In fact, all through the trade, among both skilled and unskilled, there is a lingering fondness for the observance of "Saint Monday," and time lost then has to be made up later on by what the men call "putting on the nosebag" on Fridays.

A regular system of indentured apprenticeship for five years still survives, and the trade is mainly recruited from the sons of those who have themselves spent their lives in making baskets.

Not only among the employed, but also amongst employers, the industry seems to be hereditary to a remarkable extent. It is also interesting to note that wages have risen steadily during the century, and the type of workman in the trade has much improved. One master writes that "the old, rugged, hard-working, hard-swearing, hard-drinking 'twiggy' is almost extinct," and connects this change with the existence of the union and the rise in wages mentioned above.

For all conditions of basket-makers the work is hard, and makes the arms, wrists, and fingers ache; but in the higher branches something beyond mere muscular dexterity is required of the workman. To be first-rate he must have a sense of shape and proportion, for it is on the possession of this quality that the grace and fitness of his chairs and baskets will depend. A good workman must not only be a skilled craftsman, but something of an artist as well. In London, where there is a special demand for new shapes and new ideas, this class of man is sure of employment and good

pay. Chairs and clothes' baskets made to fit into corners, and such like odd shapes, find here a ready market; and though there is always a demand for common work in the old forms, yet, as years go on, less of this class is made up in the Metropolis, and more and more is imported from the provinces or from abroad. London manufacturers in this, as in so many other trades, can command success for themselves and high prices for their workpeople only by becoming specialists.

Blind people, to whom basket-making is taught in the various institutions in London, confine themselves chiefly to the production of builders' and laundry baskets. Many of them work at home, and are employed by the institutions in which they originally learnt their trade. They are paid "list" prices, but their earnings are low. In one institution the highest earnings in one year averaged 24*s* a week and the lowest 6*s* 6*d*, with working hours from 7 A.M. to 6 P.M.

Bamboo and Cane Work.

Bamboo and cane work grew out of basket work, and form the connecting links between this group of industries and the furniture trade.

Bamboos are mainly imported from Japan, and are used in the manufacture of tea-tables, chairs, flower-stands, and a host of other articles whose main characteristic is unsteadiness.

The bulk of the trade was formerly in the West End, but in recent years has moved eastward, losing caste as it went. Its centre is now in Curtain Road and the neighbourhood.

Many of the workmen are foreigners—mostly Germans and Jews from Poland and Lithuania—who assemble in their greatest numbers in the East End. The work in their hands is subject to much sub-division. We find a few skilled

men employed on the jointing and finishing of bamboo goods, which are prepared for them in pieces by sub-workers, of whom the majority are raw hands, "greeners," men and boys who do all the less skilled parts, such as cutting the canes and filling in the hollow ends with wood, &c., operations easily learnt.

The head men earn 40*s* to 50*s* on piece, while those under them make anything, from 7*s* to 20*s*, and have to work very hard for their money. A degree above these sub-workers come a number of piece workers—also foreigners—who when fully employed make from 15*s* to 30*s*, according to their ability, the yearly earnings of an average man among them being, perhaps, 15*s* to 20*s* per week. Very long hours are sometimes worked in order to make a living out of low prices. In the West End, where rather a better class of goods is produced, earnings average from 35*s* for a fair worker to 45*s* for a quick man on piece-work, and on time-work from 7*d* to 9*d* per hour, the amount varying rather with the quality than with the speed at which a man can get his work done. Hours of a normal week in factories are from 7 A.M. to 7 P.M. for five days, out of which 1½ hours will be given up to meals, and from 7 till 2 on Saturdays.

Cane work, which is all done on piece, requires rather more skill than bamboo work, but as there is not so much demand for it, no higher rates are paid. Bamboo work is more of a novelty.

In the busy season before Christmas there is a considerable amount of overtime for which nothing extra is given. After Christmas everything is very slack, until the time for spring cleaning comes round, when the shabbier corners are disclosed by the sunlight, and there is a demand among housewives for something cheap and new with which to brighten up their parlours. But at every season employment in these trades is somewhat unsatisfactory, both as regards rate of payment and results in earnings.

There is no regular system of apprenticeship, and such boys as are being brought into the trade are generally the sons of those small masters who work at home. In the larger factories they have very little opportunity of learning. In any case very little skill is required, and the tools needed are cheap, costing in all not more than £2. With some files and a saw which the men have to provide for themselves, and a Bunsen burner over which to bend the bamboos, any workman may consider himself fully equipped.

There are in this industry a great many small masters, who often set up independently on a very slender financial basis. Success depends upon their ability to hit the public taste with a new pattern, rather than on their skill as craftsmen. They make on speculation, and must sell at whatever price they can, and are a great source of weakness to the trade. With much irregularity of employment, it is not to be wondered that there is also some complaint of irregular habits among the men.

Chair-caning.—Very little caning of new chairs is now done in London, and this industry, which used to afford employment to a great many women, has been transferred to High Wycombe, where labour can be had more cheaply.

There is also less demand for cane seats for chairs of the commoner sorts; they have been ousted by perforated wooden seats which can at any time be renewed at the neighbouring "general" shop for a small sum. There is no need now to wait for the visit of the chair-mender, who would sit and do her work before your doors, and the once familiar cry of "'ny chairs or baskets to mend" is almost a thing of the past. Such chair-caning as is done is still given to women. They work at their own homes, and are paid so much per dozen "bottoms."

Seven shillings per dozen is the price generally given for ordinary chairs, and out of this 1*s* to 2*s* must be paid for the cane. One woman said that with the help of a girl

she could just manage two dozen in four days. She was a quick worker, and those less good only manage two to three dozen per week. Work is not always to be had, and when obtained, it usually only serves to add to the earnings of a husband or father.

Cork Manufacturers.

Cork bark comes principally from Spain, Portugal, and the South of France. A little is also imported from Algiers. It is sent over either in its natural state as Virgin cork (which is the first stripping of young trees); or in bundles made up of flat slabs of the later growths; or ready for use as wine and medicine corks; or, finally, in the form of dust and shavings, in which condition it is used principally by the linoleum and kamptulicon makers in the manufacture of floor cloth.

The Minories and neighbourhood form the cork-market of London and the clearing-house of the world as far as cork is concerned; for the greater part of the manufactured cork is sent here, and then re-sorted or re-shipped untouched for the colonies and other foreign markets.

As in other industries, a great many of the so-called manufacturers are merely dealers and re-sorters who, if they sell London-cut corks at all, buy them at trade prices from others who are in reality manufacturers, and who in addition may themselves be retailers in the same market as their trade customers.

Character and Process of Work.—Manufacturers employ from forty, at most, down to two or three men, boys and women. The average cork cutter's shop would seem to find work for about twenty persons, of whom the men would be "foremen," "notchers," and "machinists," and the boys and women mostly sorters, though some of the boys are often put to the lighter cutting machines. The term "foreman" here means the cork "burner." He is the

most skilled of all the men, but not necessarily the overseer of others.

The flat slabs of cork as they arrive are full of holes and cracks and bits of rough fibre, which can only be got rid of or sealed up by the process of burning. This is done at a large open fire of cork shavings, across which run iron bars in the shape of a "grid." Here the slabs of cork are placed, and crackle and burn, and are turned by their cook with a pair of tongs until they are properly done, as if they were great beef-steaks. Then they are tossed off on one side to a boy who quenches the burning embers with water, and stacks them away to dry for twenty-four hours, after which they are taken down and swept with stiff brooms to remove the loose black. Then they are cut into lengths of equal thickness, and passed to the notcher, who again cuts them into squares small enough to fit conveniently into the different cutting machines.

Brewers' bungs or "shives," corks for pickle jars, known as "dăfies" in the trade, bath corks and medicine corks, and cork rings and discs used by wholesale chemists, are the sizes most usually made in London. Odd pieces are also used in the manufacture of cork fenders (for ships), and life-belts, and thin shavings are cut for helmets and to make cigarette tips. Wine-bottle corks come entirely from abroad.

Wages, &c.—Work is both on time and piece. Under the old system, by which corks were entirely hand-cut, piece obtained to the exclusion of time-work, but since the introduction of machinery, time-work has become more usual. On time-work notchers and machinists will make 24*s* to 27*s* per week, year in and out, and a very good man 28*s*; whilst on piece, with hard work, some can earn as much as 30*s* to 35*s*.

Foremen or burners, who are partly time and partly piece workers, make the highest money, and earn as much

as 2*s* per hour when "burning," but the hot fire is very trying to the constitution, and soon finds out the weak spots in those who are either not strong or in the least unsteady in their manner of life. They do not often work more than two or three days a week at the fire: on the odd days they cut and sort the burnt cork into lengths, and prepare it for the notchers and machinists. Their takings seem to average about 45*s* per week.

Yearly earnings are high for all, in spite of the fact that weekly wages for most men read somewhat low, for work is very regular, and there are never, so it is said, more than a dozen cork cutters out of work in any one month of the year. It is not a season trade, and should demand temporarily slacken, fresh stuff can always be safely cut for stock.

Apprenticeship is a thing of the past, and lads are promoted to the machines from the position of errand boys.

Machine work can be learned by men in three or four months, but there is not much movement either from or into this industry. Those who are in the trade remain there because their wages are constant, whilst those who are outside are not attracted because of the comparatively small amount of the weekly wage.

Other Workers—Wood Choppers.

The last Division of this chapter which the census gives up to "Other Workers in Wood, Cork, and Bark" (3466 persons) includes all sorts and conditions of men belonging to all grades of skill, from carpenters to dockyard labourers.

Bavin-makers (who make up the long bundles of rough wood used to light the fires in bakers' ovens), bonnet and hat-block makers, chip-breakers (employed in breaking up

medicinal and dye woods), clothes peg and curriers' beam-board makers, cutters and tiers of firewood, makers of garden seats (who are practically second-class carpenters) and of railway sleepers, ribbon and wig-block makers, timber creosoters, and many others are placed pell-mell in this section, and serve to give some slight idea of the variety of occupations in which a "wood worker" may be engaged.

Among these the branch in which the greatest number of persons are employed is that of firewood chopping.

This must be one of the oldest of all forms of employment. In the earliest communities the less skilled, or the less brave, were told off with their families to be hewers of wood, and to this day they are the less skilled and the less physically capable who, with their wives and children, chop and tie into bundles wood which shall help to kindle the fires of rich and poor alike.

On the south side of the river, Rotherhithe and Deptford, the Surrey Canal and the neighbourhood of the great wood basins at the Surrey and Commercial Docks are the centres of the firewood industry, whilst on the north side the work is to be found chiefly in Bethnal Green, Homerton, Hoxton, and Somers Town. Very little is done in the West End.

Character and Process of Work.—Some of the work is carried on in factories, but more, and an increasing proportion of the wood used, is chopped and made up into bundles in back-yards at home, and then hawked by the choppers themselves.

Whether in a factory or in the home, all members of a family can help. The husband saws the logs to size, the mother splits them with a chopper, one girl collects the sticks and places them ready for another to tie up into bundles. In shops this is known as the "family" or "berth" system, for the floor of the sheds (often railway arches), in which the work is done is marked out with

boards into "berths," which are allotted to the different groups of workers.

In some places men and boys are still employed, but of late years women and girls have taken up the work in constantly increasing numbers, so that wood-chopping may almost be numbered among women's industries.

Seasons.—Winter is of course the busy, and summer the slack season. Nothing is made up for stock in summer, for cut wood shrinks with keeping and would lose in value, and tied bundles become loose.

In the summer the women go fruit and hop picking, and the men find casual employment as best they can. As a rule they are not strong enough for heavy timber work, and if they do dock work at all only find odd jobs here and there, such as unloading the light yellow deals used for firewood which come from Sweden. Others seek work in the building trades.

Wages, &c.—During the wood-chopping season, a fast worker (male) can make from 30*s* to 35*s* in a full week, starting at 7 A.M. and ending at 7, with two hours allowed for meals. Slow workers make no more than 15*s* to 20*s* in the same time—that is, during the fifty-six or fifty-seven hours which make up a full working week.

A "berth," consisting of a man of ordinary energy and skill, a woman, and a child, can make about 30*s* when busy. For women working alone earnings run from 10*s* to 20*s*, according to their capacity. All work is piece-work. The men have a Trade Society which enforces a price list in a few shops, but is not very strong.

Those men who buy wood in small quantities from the timber merchants to work up at home are known as "footies," because they buy a "foot" of wood at a time —a "foot" being about as much as a coster's barrow will conveniently carry.

With respect to this home work, one man whom we saw would, working with his daughter, make from 25*s* in a busy

week down to 10*s* or nothing when things were slack. In this case the man did both the cutting into lengths and the chopping, while the daughter only made up the sticks into bundles. As soon as a load was ready the man would hawk them round the small oil shops and up and down the poorer streets in South-East London, until the happy moment arrived when the last bundle had found its buyer. He had been thirty years in the trade and was still strong enough to find a job now and again in summer at the timber wharves. But not many are capable of such heavy work late in life.

The yearly average pay is lower perhaps for all than it need be, owing to the fact that the work is carried on by a class of people who are not very regular in their habits. In shops the hours, though nominally fixed, are in reality very elastic, and in families this is true to a still greater extent. Very little work is ever done on Mondays, and the system of paying wages every evening, or at least two or three times a week, is common to every shop in the trade. This is called "subbing," and the employers declare that if it was not allowed many of the men would starve—such are the improvident habits of the workpeople.

Knack rather than skill is required of a worker. The eye must be true and the hand steady if chopping is to be well and quickly done by man or woman. That this is not always so, especially in cold weather or following on feast days, the bound-up wrist and fingers of the left hand which holds the log, often bear a silent witness. But, though practice is required to make a good worker, almost any man, woman, or child can, without training, succeed in chopping up a block of wood in some fashion into sticks with which a fire can be lighted. Only the grocer, who piles his wood before his shop counter, is particular in the matter of the neatness of the bundles supplied. Private customers do not care, and indeed often buy the loose sticks of the hawkers by the basketful.

Charity Work.—The simplicity of the work has led to its adoption by many charitable institutions as affording an easy means of employment for idle hands. The Salvation and Church Armies, Boys' Homes, and others, have made wood-chopping one of the tests of the earnestness of the desire on the part of those whom they receive, to work for their living if they but had the opportunity. And the business has this further advantage, that the stock when made is not difficult to sell. Everyone uses firewood, and many will buy out of sympathy who will not subscribe to the funds of the institution.

In such places food and housing are provided, and sometimes a small sum of money is added, but no regular wages are paid. The men employed are very seldom skilled at wood-chopping, and their work is uneconomical. Its results will not even cover the cost of board and lodging, and the use of tools.

In disposing of the wood, managers of these institutions declare that they are careful not to undersell the purely commercial section of the trade. They profess to follow the market prices, not to lead them. It is, however, almost if not quite impossible to push into a trade and yet steer clear of competition; for if restrained in one direction, it will break out in some other. For instance, it is complained that when prices are kept the same, bundles of more than the usual size are sometimes supplied; and, whether this be so or not, by whatever means a new comer secures a share of a limited trade, there must be less left for others to do, and the market price, by which the new comer, on our hypothesis, agrees to abide, will be dragged down by the struggle of these others amongst themselves. Consequently, I think it cannot be pretended that charitable institutions do not compete with commercial workers. They compete in quantity, and, if not directly in price, are at any rate the cause of competition in this direction also. And in addition they tend to lower such degree of dignity

as may belong to the wood-choppers' calling. In the value of these institutions for helping the weak and destitute must be found the justification—possibly quite sufficient—of a certain inevitable dislocation and degradation of trade.*

The West End work has been mostly done in factories, but the tendency now is for the charitable institutions increasingly to supply the richer customers, and in time this part of the trade may perhaps pass entirely into their hands. Factories and institutions are alike able to meet the wants of their customers with large supplies uniform in character. Firewood factories may thus disappear, but home workers, although unable to compete in the wholesale trade, will probably always remain to supply the wants of their poorer neighbours.

Trade Organization.

The extent to which the workers in wood are organized is shown in the following table :—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Union.	In each Division.	
3045	2376	London General Union of Mill-sawyers and Wood-cutting Machinists (1890).	200	250	Out of work and Strike Benefits only.
		London Society of Wood-cutting Machinists and Wood-sawyers (1893).	50		
3466	1271	The National Union of Wood-choppers (1884).	300	300	Offers Strike pay only. Had two thousand members in 1891 but men are leaving the Trade and the Society also. Union and non-union men work together. Much complaint of the competition of Charities.
6511	3647	(*Carried forward*)		550	

* Some of the workhouses which used to sell firewood now do so no longer, owing to the very strong feeling on the part of some of the ratepayers aroused by this practice.

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
6511	3647	(*Brought forward*)		550	
		Alliance Cabinet-makers' Association (1865).	1731		Gives out of work, Strike, Sick, Death, Travelling Benefits and tool insurance. 100 Branches, 18 in London. Three scales of subscriptions and benefits.
		Amalgamated Union of Cabinet-makers (1833).	180		Offers out of work, Strike, Sick, Death, Superannuation, and Travelling Benefits, also tool insurance. 52 Branches, 2 in London.
		Perseverance Cabinet-makers' Association (1882).	50		These Societies offer out of work, Strike, Sick and Death Benefits, also tool insurance. Rules of Perseverance Society like those of Alliance Cabinet-makers.
		Old West End London Journeymen Cabinet-makers' Socy. (1799).	100		
		Progressive Union of Cabinet-makers (1865).	362		
31,867	18,440	London West End Upholsterers' Trade Society (1894).	245	4247	Gives out of work, Death and Superannuation Benefits. Exempt from contributions during illness. Formed by amalgamation of two older Societies.
		Amalgamated Union of Upholsterers.	220		Twenty-one Branches. two in London. Gives Dispute pay (18s a week and 1s for each child under thirteen years old).
		Mattress and Palliasse Makers' Society (1889).	115		Provides out of work, "Calling Out" or Dispute, and Death Benefits.
		Amalgamat'd French Polishers' Society.	984		Offers out of work and Death Benefits. Is absorbing the other Polishers' Societies.
		Vauxhall Operative French Polishers' Society (1889).	190		Out of work Benefit. Has two Branches. Joining the Amalgamated in 1895.
		Pianoforte and Cabinet Polishers' Society	70		Out of work Benefit only. Rules similar to those of the Vauxhall Society. Has a Juvenile Branch.
38,378	22,087	(*Carried forward*)		4797	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
38,378	22,087	(*Brought forward*)		4797	
1723	1087	(*Wood Carvers.*)	—		—
4311	2077	Cigar-box Makers and Paperers' Trade Union (1890).	146	146	—
		Amalgamated Gilders' Society.	136		Offers out of work, Death, and Travelling Benefits. Had a minimum wage (8½*d* per hour) but has given it up. Relations with employers cordial.
		Amalgamated Picture-frame Trade Union (1891).	(about) 30		Only Death Benefit and relief in distress. To shorten hours of labour is its first object.
3918	2325	Amalgamated Society of Carpenters' and Ornamental Decorators of the Composition Trade (1891).	45	761	Offers out of work, Strike, and Death Benefits. Maintains a minimum of 8*d* per hour, strict as to admission. Financially weak, suspending out of work benefit for a year to increase funds.
		Amalgamated Plate Glass Workers' Trade Union (1893).	550		Offers Death, Accident, and Dispute Benefits; exempts from subscription in sickness. Has a minimum list of prices for all grades of bevellers, silverers, siders, &c. Seeks to reduce the "hours of toil."
		Fancy Cane, Wicker, and Bamboo Workers' Union (1891).	65		Offers out of work, Strike, and Death money. Special fund for sickness. Admits small masters employing not more than two boys on special terms as "Partial Clearance" members. Union and non-Union men work together.
2138	913			380	
		The London Union of Journeymen Basket-makers (1816).	315		Out of work, Strike, Sick, Death, & Travelling Benefits. Union work with non-union men. No member may do work for or to sell to an employer at home.
50,468	28,489	(*Carried forward*)		6084	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
50,468	28,489	(*Brought forward*)		6084	
1058	512	The United Cork Trade Friendly Society (1880).	100	120	Out of work pay only. Relations very friendly with employers who send up to them when in want of men. Keep out of work book with printed list of all employers in the Trade.
1086	512	The Cork Cutters' Club.	20		An old Society but rather exclusive.
		(*Funeral Furnisher, &c.*)	—		
52,612	29,513			6204	

Besides these, there are three employers' associations: the London Association of Box and Packing-case Makers and Saw-mill Proprietors (formed in 1890), the Cabinet Trades Employers' Association, and the Plate Glass Trade Association. In 1894 a Furniture Trades' Federation was organized to secure combined action of the men's societies; at present (November, 1894) it represents eleven societies with 2500 members.

Regarded collectively, this group of trades is poorly organized, only 6204 men being members of trade societies out of a total of nearly 30,000 adult men employed, or 21 per cent. No single trade is fully organized. The proportion of unionists is greatest in the West End, and the few entirely union shops that exist are in that district. Passing Eastward by Tottenham Court and Curtain Roads, the union element decreases.

Death and out of work benefits are usually given. Two or three small societies in trades where there is much irregularity do not give the latter, while various devices are adopted by unions giving this benefit to prevent their unemployed members relying entirely upon it, and to

give them an incentive to seek work. Thus the Progressive Cabinet-makers allow a man to draw for eight weeks; he must then work and pay his subscription for eight weeks before he can come on the fund for the other eight weeks in the year to which he is entitled; members of the Perseverance Cabinet-makers cannot draw this benefit for more than six consecutive weeks, while the Pianoforte Polishers fix their limit at four or five consecutive weeks, and the Amalgamated Gilders give six weeks' benefit in each half year, but regulate the amount paid by the state of the Society's funds. Sick pay is unusual, except in the cabinet-makers' societies. The West End Upholsterers and a few other societies exempt their members from contributions during illness.

The five cabinet-makers' societies form a distinct group. They give similar benefits, though for varying periods and amounts. With one exception (the Progressive Union of Cabinet-makers), married members can register their children, aged three to thirteen, and are then entitled, when unemployed, to an extra 1*s* per week for each child. All the unions insure members' tools against fire for amounts varying from £2 to £20, some allowing larger amounts for a small extra premium. The Amalgamated Union of Cabinet-makers gives sick benefit; in the other four societies it is optional, and a separate fund is provided by payments of 2*d* to 6*d* a week. Each society's rules strictly forbid its members undercutting each other or taking "lump" work in a day-working shop, under penalties varying from a fine of £1 to exclusion from the society. The tendency to ensure continuous employment by accepting work at a price slightly lower than that ruling in the shop, is ever present, and forms one of the difficulties of the societies, and it is significant that three of them include amongst their objects the regulation of the relation between *workmen* and *workmen*, as well as between *employer* and *workmen*. In these trades, unionists are often a minority

in the shops, union and non-union men usually working together. One result of this is that in case of a dispute in any shop, the societies are seldom able to bring out all the men. They withdraw their own members, and give them dispute pay. Besides cabinet-makers, these societies include wood carvers and turners and even coach finishers, these men having no separate organization of their own.

Amongst upholsterers a strong tendency to consolidate their organizations has developed recently. Two societies combined in 1894 to form the London West End Upholsterers' Trade Society, and the East End Society has become a branch of the Amalgamated Union of Upholsterers, a national society, which has also opened a West End branch. These movements have given an impetus to unionism in the trade and the three societies are increasing their membership.

The French polishers, as already noted, are more fully organized than any other trade in this group. Amongst them the same tendency towards consolidation may be noted. Until recently there were six societies, but during 1893-4 four of these have joined the Amalgamated French Polishers' Society, and the Vauxhall Society has decided to join early in 1895.

The Bevellers' Trade Union dates from 1877, but only became an important power in 1891, when it was reorganized, and at the end of 1892 it amalgamated with the Silverers, Siders, and Fitters' Union (established 1891), the joint society being called "The Amalgamated Plate Glass Workers' Union."

Not one of the five societies connected with the bamboo, basket, cork, and firewood industries is a really powerful factor in the trades they represent, with the exception, perhaps, of the basket makers. In all cases unionists work with non-union men. The prospects of a continued existence for all are nevertheless good, if we except the

National Union of Firewood Choppers, which seems to be on the downward course. Owing to, and as long as, the enthusiasm roused by the dock strike in 1891 lasted, this society enrolled a great many members—as many as two thousand—but since then the competition of charities has affected the profits to be made in the business. Fewer men are employed than formerly, and, as they leave the trade, or only return to it in winter, they cease to take any interest in the existence of a trade society.

Wages Statistics.

The census shows that 29,513 adult men were employed in these trades in 1891. Returns have been received from 35 firms employing 784 persons, of whom 591 are adult men. The occupations these firms represent are as follows :—

Cabinet-makers and upholsterers	15	35 firms.
Other furniture makers	4	
Mill-sawyers and box-makers	3	
Bedding manufacturer	1	
Carvers, gilders, and frame-makers	4	
Funeral furnishers	4	
Basket-makers	2	
Cork workers	2	

The earnings of the adult men thus employed were in an average week :—

Below 20*s*	12,	or	2 per cent.		Under 30*s*, 30 per cent.
20*s* to 25*s*	70	,,	12	,,	
25*s* ,, 30*s*	97	,,	16	,,	
30*s* ,, 35*s*	108	,,	18	,,	30*s* and over, 70 per cent.
35*s* ,, 40*s*	166	,,	29	,,	
40*s* ,, 45*s*	79	,,	13	,,	
45*s* and upwards	59	,,	10	,,	
	591	,,	100	,,	

The Board of Trade returns include particulars of 21 firms employing 895 persons, complete details being given

respecting 488 persons, of whom 432 are adult males, 358 belonging to the section.

These may be compared with our returns as under:—

	—20*s*	20*s*—	25*s*—	30*s*—	35*s*—	40*s*—	45*s*—
Our returns ...	2 °/₀	12 °/₀	16 °/₀	18 °/₀	29 °/₀	13 °/₀	10 °/₀
	30 °/₀			70 °/₀			
Board of Trade returns	3 °/₀	8 °/₀	18 °/₀	16 °/₀	27 °/₀	16 °/₀	12 °/₀
	29 °/₀			71 °/₀			

The close agreement between the two statements is remarkable, but is probably owing to the returns in each case being mainly from firms of the best class. For this reason, and because so many varied occupations are included in this section, the returns cannot be taken as representative of the earnings of this group of workers as a whole. The results are in both cases too favourable, and the proportion below 30*s* should be considerably larger. Moreover, allowance has to be made for the short time that is such a noticeable feature in some of the trades of this group.

Of the apprentices and boys (133) for whom returns have been received, 63 per cent. earned 10*s* or under, about one-third of these receiving 9*s* or 10*s*, and only 2 per cent. reached 20*s* a week. This agrees with the information from other sources and is probably near the truth.

Social Condition.

Of the 29,500 adult men employed, about 21,050 are heads of families and come under social classification. It will be seen from the table which follows that 52 per cent. are living under crowded conditions with two or more persons to a room, as compared with only 14 per cent. returned as earning under 25*s* a week; next, that 29 per cent. live one or two persons in a room, as compared to 34 per cent. earning 25*s* to 35*s*; and finally that the central

classes only amount to 19 per cent., whilst no less than 52 per cent. of those returned are earning 35*s* and over:—

Comparison of Earnings with Style of Life.

Earnings as stated.			*Classification of population.*		
Below 20*s*...	12, or	2 per cent.	3 or more in each room,	26,100 or	22 per cent.
20*s* to 25*s*...	70 ,,	12 ,,	2 to 3 ,,	36,700 ,,	30 ,,
25*s* ,, 30*s*...	97 ,,	16 ,,	1 ,, 2 ,,	34,500 ,,	29 ,,
30*s* ,, 35*s*...	108 ,,	18 ,,	Less than 1 ,, More than 4 rooms 4 or more persons to a servant	22,500 ,,	19 ,,
35*s* ,, 40*s*...	166 ,,	29 ,,			
40*s* ,, 45*s*...	79 ,,	13 ,,			
45*s* and upwards	59 ,,	10 ,,			
	591 ,,	100 ,,		119,800 ,,	100 ,,
			Families of employers, servants, &c. . .	18,900	
				138,700	

This statement confirms what has been already said as to our wages returns being too high. On the other hand it must be noted that, unlike to most industries, the majority of the men, particularly the East Enders, owing to the locality and nature of their work, live in the inner ring of London, where rents are generally high and accommodation restricted. Thus as a result of exceptional circumstances affecting both sides of our table, the comparison of earnings with style of life breaks down. The true social condition of the men lies between the two extremes indicated, but is probably more nearly shown by the conditions under which they live, than by the return of wages.

In Bethnal Green, Shoreditch,* and the streets off the Hampstead Road, these men form a noticeable proportion of the residents, but amongst the better class, particularly of married men, a decided preference is shown for the outer suburbs, where cheaper rents are an important item. These are to be found in the greatest numbers towards the

* It is remarkable, that of the 78,000 resident in the inner ring, no less than 46,000 are found in the East End.

north, but are scattered all over the outer ring of London, at Hammersmith, Notting Hill, Paddington, Kentish Town, &c.—whilst numbers come in to their work from Walthamstow, Edmonton, Tottenham and Hornsey. Sawyers and wood-cutting machinists are found in South and East London, and basket makers mainly live south of the Thames.

Comparatively few are able to go home to their meals. Cabinet-makers, carvers and other workers in furniture woods often bring their food, or, sending out for what they want, cook and eat it in the workshop; others go to coffee or public-houses. French polishers are seldom allowed to have their meals in the workshop; those who bring their food from home usually eat it at some neighbouring public-house, as the coffee-houses do not much care for the custom of men who buy tea or coffee only. In nearly all cases upholsterers go out to their meals, either to a coffee-house or tavern.

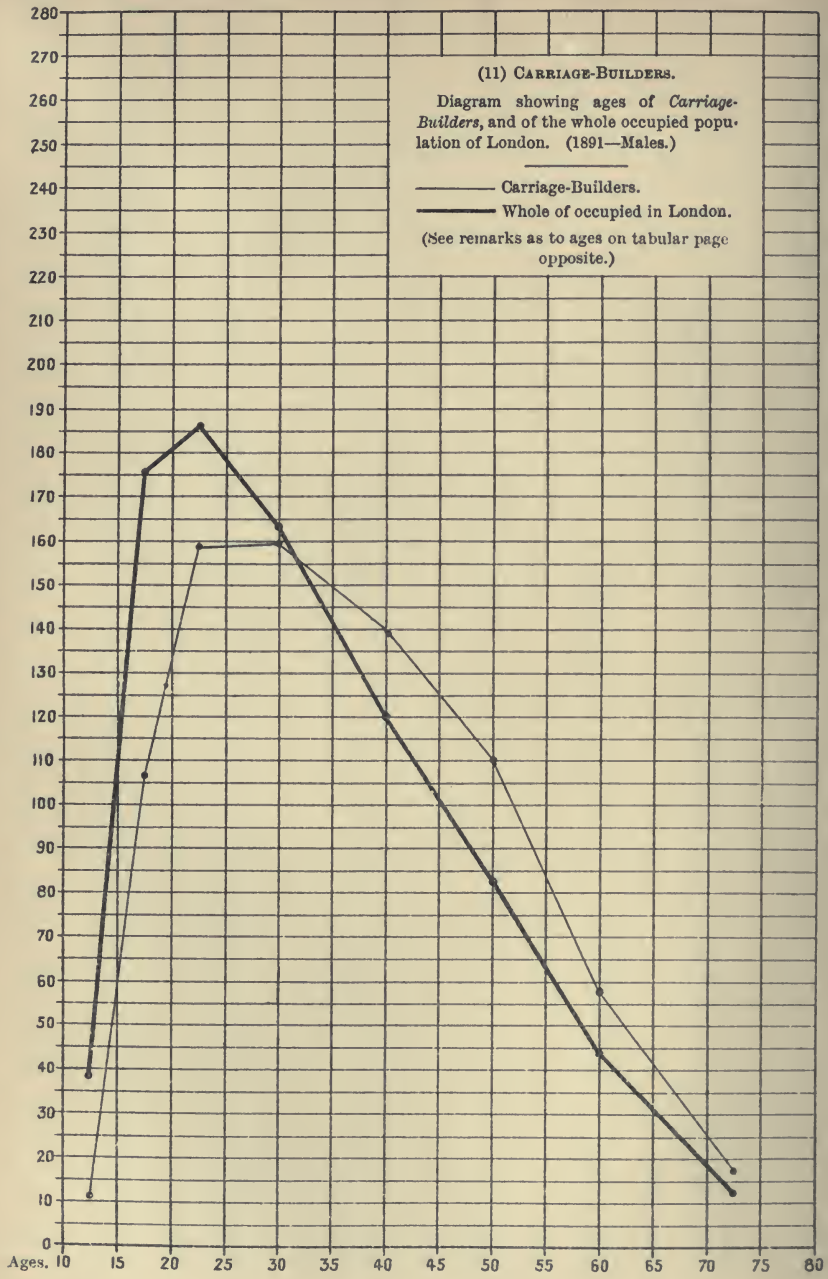
Aprons are worn by most wood workers; carvers and a few others may wear blouses, but, as a rule, the worker simply removes his coat and dons the apron. Some keep an old waistcoat in the shop. Upholsterers used to wear a holland jacket, but this is not much used now; men working for West End shops carry a pair of slippers to wear when working in a furnished house.

The wives seldom go out to work, and when they do so, it is usually to supplement irregular earnings, or because the husband is out of work. Naturally the proportion is greatest in the branches of the trade most affected by the seasons, such as French polishers.

Most of the men belong to a friendly society; some may be members of more than one. The proportion enrolled in trade societies is much smaller. Shop sick or provident clubs are exceptional, and it is only in the larger firms that they can be maintained.

To support their organizations the men pay 10*d* to 2*s* 6*d* a week, or about 5 per cent. of their earnings.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER II.

CARRIAGE BUILDING, &c. (*Section* 11.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females.	Males.			Total.
	All Ages.	—19	20—54	55—	
(1) Coach & Carriage-maker .	58	514	4800	762	6134
(2) Wheelwright	6	333	2293	447	3079
(3) Perambulator maker, &c. . .	54	50	250	41	395
TOTAL....	118	897	7343	1250	9608

In these trades there is rather less than the normal number of young men and some excess at the middle period of life, 35 to 50.

As with most industries the diagram shows a sudden drop in the number employed after the 55th year of age. This tendency is more marked among coach and carriage makers than among wheelwrights.

Enumerated by Families.

Sex	Males		6260	Heads of Families, 6276.
	Females		16	
Birthplace	In London	44%	2751	
	Out of London..	56%	3525	
Industrial Status ..	Employer	9%	599	
	Employed	84%	5245	
	Neither	7%	432	

Total Population concerned.

	Heads of Families.	Others occupied.	Unoccupied.	Servants.	Total.
Total.	6276	5969	16,600	257	29,102
Average in family ..	1	·95	2·64	·04	4·63

Distribution.

E.	N.	W. & C.	S.	Total.
944	2762	2418	3484	9608

Details of Occupations (from the Census Dictionary).

(1) Draughtsman, body-maker, leather worker, smith, carver, fitter, painter, plater, polisher, lining-sewer, maker, shaft-bender, axle maker.

(2) Spoke, axle box, felloe-cutter or bender, tyre smith.

(3) Tram-car builder, repairer, barrow, cart, trolly, van, dray, and waggon builder, cartwright, bath and wheel chair, wheelbarrow and truck-maker.

Classification.

Numbers living in Families.		%
3 or more to a room	3786	13·0
2 & under 3 ,,	6913	23·8
1 & under 2 ,,	8225	28·3
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	9558	32·8
Less than 4 to a servant and 4 or more to 2 servants	305	1·1
All others with 2 or more servants ..	58	·1
Servants	257	·9
	29,102	100

	Inner.	Outer.	Together.
Crowded ..	49 %	30 %	37 %
Not ,, ..	51 %	70 %	63 %

Distribution.

East ..	Inner 2051 / Outer 573	2624
North	Inner 2463 / Outer 5769	8232
West ..	Inner 899 / Outer 4886	5785
Central	Inner 1640	1640
South-East	Inner 652 / Outer 3132	3784
South-West	Inner 2417 / Outer 4620	7037
		29,102

Inner 10,122, or 35 %
Outer 18,980, or 65 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males.	Females	Under 20.	Over 20.		Males	Females	
(1) Coach, Carriage-maker.....	393	8	514	4865	46	304	4	6134
(2) Wheelwright	243	4	333	2286	1	211	1	3079
(3) Tram, Cart, and Perambulator maker	57	3	50	197	47	37	4	395
TOTAL.....	693	15	897	7348	94	552	9	9608
	708		8339			561		

Proportion of Employers to Employed—1 to 12

Van and Coach Building.

Regarded from a general point of view, the same rules of construction and the same divisions of work apply to all wheeled vehicles, from the coster's barrow to a three-horse van, from a child's perambulator to a four-horse coach. But the work of making these different vehicles is divided and specialized in various ways. First: there are the broad lines which separate carriages from vans, and heavy vans from light vans or those tradesmen's carts which fill an intermediate place between vehicles intended to carry people, and those intended to carry merchandise; and there is a similar division between wheeled chairs or perambulators and hand-barrows or trucks. Next, there is the distinction between wheel makers and body-makers, but this partly overlaps the others we have mentioned, as there are establishments solely occupied in the making and repairing of wheels, though dealing with all kinds of wheels; and there are also body-makers who work for the trade in making the body of any kind of cab or carriage, but do not finish the work, though calling themselves carriage builders. Within these limits again the trade is still further specialized; some manufacturers working for home and others for foreign demand—whether at carriages or at cabs. Omnibuses again are a speciality, and railway carriage building a distinct trade; but railway carriages and omnibuses are very generally constructed by the companies in their own workshops.

Van building—to take this first—is an important and growing industry in London, the heavy vans being made by large and old-established firms, while the lighter sort, for which there is a less regular demand, are left to a great extent to small employers. The large firms which undertake heavy work are to be found in east and south-east London, the districts of heavy cartage work. The light

cart work is dispersed all over the metropolis, as are the tradesmen who require vehicles of that kind.

The van trade, whether heavy or light, offers at present greater advantages to the workmen than carriage building. The demand is more steady, less affected by the seasons or by depression of trade, and, beyond this, it does not suffer from the system of "labour contract" with piece masters, which, as will be shown, is the great evil of the coach building business.

The different branches of the work are:—

(1) Iron workers—smiths and hammer-men or assistants.

(2) Wood workers — body-makers and wheelers. (Some men learn both branches.)

(3) Painters—brush-hands, pickers-out, and letter-writers.

The wages range from 33*s* to 42*s* for the smiths and skilled wood workers, the hammer-men receive from 22*s* to 26*s*. Of the painters, the letter-writers are the most skilled, and are usually only called in when required, receiving 10*d* to 1*s* an hour. "Pickers-out" draw the decorative lines, and average from 30*s* to 36*s*, while the ordinary brush-hands are paid 20*s* to 26*s*.

The usual hours are 54 per week, being from 6 to 5 or from 7 to 6. Half an hour is allowed for breakfast, and 1 hour (from 1 to 2) for dinner. An hour or two extra are worked during the busy summer months. Long hours are far more common among small masters than with the large firms, who have standing contracts on which they can fall back in the slack season, or who can work for stock, and so make a full use of their plant, and keep employment fairly even. The small firms have no such chances, but must make hay while the sun shines.

Both time and piece-work are found in this trade, the piece-work being carried out under a rather complicated system. A man may sometimes have several jobs in hand

at once. Each of these will have its own price, and for each a separate account is kept; so that the week's wages consist of amounts paid according to the estimated value of the work done at each of these several jobs. It is not difficult to value roughly what is done in body making and wheeling, but smith's work is less easy to estimate, on account of the numberless small things of which it consists.

Coach building.—The different branches of coach or carriage building are the same as those of van building, with some elaborations and extensions. Besides smiths and hammer-men, there are fitters or vice-men, who finish off the more delicate iron-work. Among the body-makers there are men whose special duty it is to build up the under part of the carriage upon which the body is supported, and to hang the whole on its springs. These are called "carriage-makers." Then there are "trimmers" and "budget-trimmers," of whom the former do the cushions and upholstery, and the latter the leather fittings for hoods, splash-boards and aprons. All these, with wheelers and painters, are generally to be found working under one roof, and perhaps the only class of workmen engaged in carriage making who generally work apart are the tyre-smiths, whose emissaries may often be seen rolling the finished iron-bound wheels back to the shop from which they came.

Blacksmiths and wheelers as a rule occupy the basement of a carriage building establishment; the ground floor and part of the first floor are used as showrooms, while the rest of the premises is given up to other branches. The combination, not easy to dispense with, of workshops and showrooms in one locality, and the great space needed for both, coupled with the need of keeping up so large a place of business either in or near the fashionable quarter of the town, make rent a very heavy item in this trade, and when we add to this the uncertainty attaching to the sale of an

article so costly, for which there is only a capricious demand, we cannot wonder that the prices charged are high.

In London wheels are put together and finished, rather than made throughout. The wood used comes mostly from America, and is sent more and more completely prepared for use, while some wheels are imported ready made.* The trade is thus a dwindling one. The introduction of rubber tyres for hansom cabs, and the laying down of smoother pavements, increase this tendency, for whereas eighteen months or two years used to be the life of a pair of cab wheels, the new pattern will run three times as long. This applies also relatively to the whole frame of the carriage.

The making of a carriage demands great skill. All the wood-work has to be cunningly shaped and morticed on curved lines. Like a ship, it has hardly a straight place or flat surface. The drawings to which the body-makers work involve several sections, as well as ground plan and elevation, all of which a good body-maker must be able to draw to scale and even then much is left to the knowledge or judgment of the handicraftsman. The workmanship must be perfect, and the materials good and well put together, or they could never survive the shocks and jars of which the life and adventures of a carriage, and still more of a cab, consist, or stand the daily washing needed.

The coach wheeler must not be confounded with the van wheeler, any more than a carriage body-maker with a van body-maker. For carriage wheels, the utmost nicety of finish is demanded, and no little judgment in selecting the wood for each part. The best London-made wheel has its outer rim in six or seven pieces or "felloes" (pronounced "fellies"). Each felloe is connected with the hub by two spokes; every hole must be bored true, and every spoke fit exactly in its place, and the felloes, as set together, form an exact circle ready for the tyre. For the

* Heavy van and coach wheels are still almost altogether made in England. America excels only in the manufacture of light wheels.

putting on of the tyre the wheel is bound down tightly, the hot iron ring is dropped over it, and then the whole is slowly immersed, revolving as it dips into the cold water. The iron rim contracts as it cools, and, in contracting, binds the whole together.

The painting of carriages is no less perfect than their construction. There may be five or six coats of paint and varnish on a van, but on a carriage there will be as many as nineteen or twenty, and the utmost care has to be taken to avoid injury by dust during the finishing processes. When the body of paint is sufficient, and has been once or twice varnished, it is smoothed down with pummice powder till a perfect surface is obtained, and then the carriage and the men employed on it are shut up in a dust-proof compartment—a sort of glass case—for the laying on of the last coats of colour and varnish. The "picking out" with coloured lines is also fine work, and heraldic painting still more so.

The individual piece-work system which obtains in van building, according to which each man undertakes a series of jobs, being paid so much week by week as the work progresses, and the balance of the agreed sum on completion, has developed in carriage building into a system of "piece masters"—some one leading man taking the contract, and making his own terms with those who work with him. All materials are provided by the employer, and all work is done on the employer's premises, and thus under his inspection, but he has no direct relation with the men employed by the piece master, has generally no knowledge of what they are paid, and sometimes keeps no record even of their numbers. He has merely to satisfy himself as to the quality of the work done, and to see that the total amount earned covers the sum drawn weekly on account.

This system is doubtless efficient and saves trouble in superintendence and office work, but for various reasons is not altogether satisfactory to the employers, and is disliked

by the men as leading or likely to involve "sweating" and "slave driving." It also intensifies the evils of irregularity of employment, as the piece master has no inducement, nor indeed any power, to "find work" for his men in seasons of slackness. Under a piece master the tenure by which men hold their work is practically limited to the job in hand, and an evident result of this insecurity of tenure is found in the extent to which men shift from shop to shop.

Carriage builders of the highest class make all they sell and every part of it themselves, and the best carriages of all are made entirely in London in this way; but some leading firms have also factories in the country where rather cheaper work is done, especially in making pony carts. Other carriage builders, less particular, are accustomed to put out part of the work, as, for instance, the body-making, to firms who "work for the trade," and by employing improvers from the country, at low wages, are able to produce more cheaply. The vehicles are painted by the employing firms and sold as their own make. It is also said that country carriages, bought by the trade in London, are resold to the public as London made.

In addition to coach and carriage builders proper, there are many small repairing establishments amongst the mews, where the building or putting together of a cab may be undertaken. In the aggregate, a considerable number of men are thus employed and get constant work, though at rather below the standard rates. These men are usually paid by time, as piece-work is not adapted to the business undertaken in these small shops.

Thus we find a curious reversal of the almost general rule that small masters give the most irregular employment.

The piece master system makes it difficult to obtain an exact account of wages earned in carriage building. It may, however, be fairly assumed that the work is paid in proportion to the high skill required. Our best information comes from the trades unions, and will be given later. It

shows rates varying from 28*s* to 49*s*, the largest proportion earning from 30*s* to 36*s* a week. The smiths are paid the most, averaging nearly 40*s*; the average pay in other branches varies from 31*s* to 35*s*. These wages are for a full working week, and a deduction of at least 10 per cent. must be made to arrive at a correct average for the whole year, including short time and holidays. They also refer rather to the cream of the trade. Painters have more short time and more overtime than any other branch, for the work of smartening carriages up comes mostly in spring or summer.

The hours throughout the trade are 54 or 55½—usually from 7 to 7, and till 1 on Saturdays. Two hours are allowed for meals, viz. 8.30 to 9 breakfast, 1 to 2 dinner, 4.30 to 5 tea.

The trade is a healthy one (except as regards some of the painting), and loss of capacity does not come early.

Both van and carriage builders have their slack and busy season, the busy time for both being from March to October, but, as has been said, in van building the large firms contrive as a rule to keep going all the year round by turning to standing contracts or working for stock, while in small establishments, especially, repair work gives a measure of constancy to the employment afforded.

Some of the men in small establishments, especially the wheelwrights, work under very uncomfortable, if not insanitary conditions, in back-yard workshops. "A dung hill will do for a wheelwright to work on" is an old country saying, and *mutatis mutandis* applies in London also.

As far as London is concerned, there is neither in van building nor carriage building any regular system of apprenticeship, or the training of boys in any form. Not many boys are employed at present, though, wherever machinery is introduced, a change takes place in this respect. The London trade is fed from the provinces. Young men who have seen the general course of work in some pro-

vincial, or even quite small village, shop, where apprenticeship frequently obtains, find employment as improvers; taking low wages until they have picked up enough of London style to better themselves. Some of these are employed in all the shops and factories, but most, as we have hinted, find a place in establishments that "work for the trade," and cheapen their product by using much of this kind of labour. In shops of this style, at any rate, it does not by any means follow that the work will be bad. The master is probably himself a highly skilled man, and his superintendence of every part which he does not himself do, is close and unremitting. But in the large shops, where improvers are employed to any extent, the work does suffer.

Improvers, during their period of probation, have to acquire a complete kit of tools, which, for body-making especially, are very expensive, costing, it may be, £20, or even £30. The amount of capital sunk in tools, and the charges for renewals, are not always sufficiently regarded in considering the position and remuneration of some kinds of skilled labour.

There is little or no foreign competition, excepting in the importation of wheels or parts of wheels from America. The product is too bulky, and thorough workmanship too essential, to encourage it. From Belgium alone is there any importation of cheap carriages. There is, however, sharp competition with some provincial firms, which at one time seriously threatened the London van trade, and have almost obtained a monopoly of the manufacture of light carts and pony traps.

Railway Carriage Building.

Although all the greatest railway carriage works are out of London, the majority of London shops being engaged on repairs rather than on actual building, a considerable

number of men are, nevertheless, employed here on this work by the various Companies.

Railway work approaches more nearly to regular machine-using factory industry than the rest of this section. One or two of the leading private carriage builders, and van builders in an increasing degree, employ machinery to some extent for cutting their wood-work; the building of private carriages is, however, too varied in character to be anything but a hand industry, and belongs to that (in London) large class of trades which stand by old ways and successfully defy the modern spirit. Railway work, however, is different, being a constant repetition of the same processes, and therefore capable of greater use of machinery and more perfect organization.

The system of payment adopted in London for railway work may be called "joint piece-work." The price for the work to be done is fixed for and with a group of men, without the intervention of any piece master, and the functions of superintendence are assumed by "chargemen," —that is, men in charge of the job—under the general oversight of foremen, who do not share at all in the price but are paid wages. The foreman fixes the amount to be drawn weekly as the work proceeds by each individual worker, any surplus being paid over when the job is finished. This plan has worked successfully for some years. As to price paid for each job, it is usually adjusted so as to leave, under ordinary circumstances, 15 to 25 per cent. upon the total wages for division. The initial wages are rather below those in the outside trade, but the employment is very regular, and the men grow old in the service of the Company. Thus the service is liked, and the Companies can choose their men; the result is that they give the preference to young men—taking on as boys sons of men already in their employ—and in some cases refuse altogether to take on men over thirty-five, as less profitable servants and less able to fit in with their schemes

of superannuation or sick benefit. It is complained, also, that some Companies employ and train more boys than they need as men, and so help to flood the labour market.

One other advantage should be mentioned as connected with the service of the Railway Companies. It is that of special cheap fares over the line of the employing Company. This means greater freedom in the choice of a dwelling, and often a saving in rent. Two or three Companies have lately joined in granting reciprocity to each other's employees in this respect, and thus extended considerably the advantage mentioned.

Perambulator Making.

The making of perambulators and children's mail-carts is the last trade in this section. It is carriage building in miniature. There are exactly the same sub-divisions in the work—body-makers, smiths, fitters, painters and trimmers —everything except wheelwrights, for the wheels (usually of iron) come from Birmingham. The men who fix the body on the springs are, however, more appropriately termed "hangers," instead of "carriage-makers," as in the large trade.

The work throughout is of course lighter, and is far less skilled than that employed on carriages or vans. A very ordinary carpenter, for instance, is fully qualified to make a perambulator body, and would quickly learn to do it, and the painting and trimming are, comparatively speaking, very common work. The smith alone may be termed a highly skilled man, for, although not requiring the science of a carriage-smith, the light iron-work for the springs and frames of these diminutive vehicles calls for a certain delicacy of handling which an ordinary blacksmith could not supply.

The system of work varies—in some houses we find piece masters, in others individual piece-work, and in some

again day-work or a mixture of time and piece. There is no rule. Occasionally women do all the trimming; the finishing of curtains, aprons, &c., is always left to them.

The character of the work turned out varies immensely, and with it the wages, which in some cases may be as high as that of regular carriage builders, but more commonly is on a decidedly lower level. The great development of the business, the spread of the use of the "pram" downwards amongst all grades of society, has made cheapness so essential that highly paid work cannot be employed for this class of carriage.

Not only is the pay less, but even more than in carriage building, the employment is an affair of seasons. There is a rush of work in the spring, beginning in February or March, and lasting through the summer till August, after which the slack period gradually comes on, culminating in November, when one-third of the hands needed in busy times are out of work. The young hands are thrown out, and are generally taken on again when the busy season returns.

There is an export trade to the Colonies and India, and also, though to a decreasing extent, to the Continent.

Trades Unions.

The Trades Unions connected with this section are as follows:—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
6134	4865	The United Kingdom Society of Coach-makers (1834).	437	757	Out of work, Strike, and Death Benefits. Pension for aged. Has four branches in London. Total membership in United Kingdom, 5584. Union and non-union men work together. One branch consists of railway men.
		The London Coach-makers' Trade Union (1824).	220		Out of work and Death Benefits and Pension. Union and non-union men work together.
		The Coach-makers' Federal Union (1894).	100		Admits all classes of Coach-makers.
3079	2286	The London United Society of Wheelwrights, Blacksmiths, Painters, and Hammer-men (1886).	400	574	Out of work, Strike, and Accident money. Compensation for loss of tools. Union and non-union men work together. Four branches in London.
		Loyal Free Industrious Society of Wheelwrights and Blacksmiths (1877).	62		Head Society in Bolton, founded 1830. Has twenty-three branches in United Kingdom. Out of work, Death, and Superannuation Benefits.
		Coach Wheelwrights' Society (1835).	50		Out of work, Death, Accident Benefits. Compensation for loss of tools. Cannot enforce price list. Pension.
		Smiths and Vicemen.	62		
395	197	(*Perambulators, &c.*)	—	—	—
9608	7348			1331	

Thus out of a total number of 9608 in the section, there are 7348 employed males over 20, of whom 1331 are organized, or 18 per cent.

There is also an Association amongst employers which takes the form of a Benefit Society for widows and orphans of coach-builders left in distressed circumstances. It serves to bring the employers together and thus forms a trade organization for them.

Subscriptions to the Men's Societies vary from 1*s* per week (U. K. S.) to 6*s* 6*d* a quarter (United Society of Wheelwrights and Blacksmiths). The Coach-makers give out of work benefit for as much as a year: 18*s* for the first three months, 10*s* for the second, 6*s* for the third, and 4*s* for a further three months if a man has been a member for three years; it devotes less to other forms of benefit. The Coach Wheelwrights only provide out-of-work pay for thirteen weeks at 2*s* a day, but give a pension of 4*s* after thirty years' membership, and allow their pensioners to earn up to 12*s* per week.

The Societies, except the U. K. S., which has a voluntary fund, give no sick benefits beyond the negative one of exemption from contributions. Death money varies from £2 to £10, in accordance with the length of membership, and half the sum is usually given at the death of a member's first wife.

Pensions are rather a peculiar feature among these Societies—no fewer than four of them make provision for old members, varying from 2*s* 6*d* to 8*s* per week. Accidents leading to total incapacity are provided for by a lump sum varying from £5 to £50: and money is given for loss of tools by fire, if not due to the member's own carelessness.

The greater number of the Societies are in federation with the United Kingdom Society, but the tie is a loose one, as the London men seem to fear being "bossed" by the Head society in Liverpool. Neither separately nor collectively are the Societies strong, and the employers are

hardly conscious of their existence. This applies however to London only, for in the north of England the union appears to be large and powerful. Those that have a price list at all do not enforce it. No distinct methods of training are recognized by them, and union will always work with non-union men.

Wages Statistics.

In these trades 7348 adult men are employed, and we have information as to earnings for 685, employed by eighteen firms as under :—

Coach and carriage builders	6	=18 firms usually employing 848 persons, of whom 737 are adult males, but 52 of these belong to other sections, as sawyers, carpenters, joiners, wood-machinists, saddlers, lock-fitters, &c.
Railway carriage builders	2	
Coach ironmongers.....	3	
Van and cart builders	3	
Van builders and wheelwrights ...	2	
Perambulator makers.....	2	

The earnings of these men in an average week are as follows :—

Below 20*s*.....	56, or	8 per cent.	Below 30*s*, 51 per cent.
20*s* to 25*s*.....	180 ,,	26 ,,	
25*s* ,, 30*s*.....	115 ,,	17 ,,	
30*s* ,, 35*s*.....	148 ,,	21½ ,,	30*s* and upwards, 49 per cent.
35*s* ,, 40*s*.....	98 ,,	14½ ,,	
40*s* ,, 45*s*.....	54 ,,	8 ,,	
45*s* and upwards...	34 ,,	5 ,,	
	685 ,,	100 ,,	

These figures may be compared with the returns made to the Board of Trade, in 1886, from twelve firms, employing 308 persons, of whom 254 count as male adults in this section.

	Under 20*s*.	20*s* to 25*s*.	25*s* to 30*s*.	30*s* to 35*s*.	35*s* to 40*s*.	40*s* to 45*s*.	45*s* and over.
Our returns ...	8 %	26 %	17 %	21½ %	14½ %	8 %	5 %
	51 %			49 %			
Board of Trade returns	1½ %	23½ %	17 %	17 %	17 %	17½ %	6½ %
	42 %			58 %			

The differences between the two returns are caused, partly, by the fact (already mentioned) that the Board of Trade return is for a "full week's ordinary wages," whereas our figures show "actual money earned"—hence 1½ per cent. under 20*s* as compared to 8 per cent.; and partly by the railway carriage builders, from whom the Board of Trade had no return, and amongst whom (as we have seen) a large proportion earn less than 30*s*. There has actually been a rise in wages since 1886.

As regards the carriage builders, the returns are incomplete, by reason of piece workers, whose money is paid over to the leading men, with the result, already referred to, that no record exists in the books of the exact numbers who share the total sum.

As to regularity of employment, the difference between busy and slack weeks is returned as follows:—

		Busy.	Slack.	Percentage Reductions.		
				In numbers.	In earnings per head.	Combined.
Our Returns	Perambulator makers	202	102	49½	4	51
	Carriage builders, &c.	116	102	12½	10	20½
Board of Trade Returns	Carriage builders, &c.	354	299	15½	21½	33½

(The above figures include all employees—men, women or boys—whatever their work.)

The Board of Trade returns place the busiest weeks in January, March, April, May, July, August, September and October; particularly in July. The slackest weeks appear in November, December and January. These dates point very clearly to established seasons.

Only ninety-four females are returned as employed in these trades, and they seem mainly to be connected with perambulator work. Carriage trimming is done by men. It appears probable, however, that here, as elsewhere, the census understates the amount of female labour, for our returns include forty women and girls. Their earnings vary from

2*s* to 18*s*. The earnings of 60 per cent. are not above 10*s*, and 30 per cent. make not more than 5*s*. The 40 per cent. who earn 11*s* or more include 10 per cent. with 15*s* or more.

Of boys, the census counts 897, and our returns speak for seventy-one of them. Their pay ranges from 5*s* to 19*s*, no doubt according to age; we find them working with wheelwrights, carriage-smiths, and painters.

Social Condition.

Of the 7348 adult males employed in carriage building, about 5240 are counted in the census as heads of families, and are the men whose earnings and social condition we are attempting to determine :—

Comparison of Earnings with Style of Life (Carriage Builders).

*Earnings of sample tested.**			*Classification of population.*		
Below 20*s*...	56, or	8 per cent.	3 or more in each room,	3800, or 14½	per cent.
20*s* to 25*s*...	180 ,,	26 ,,	2 to 3 ,,	6900 ,, 26½	,,
25*s* ,, 30*s*...	115 ,,	17 ,,	1 ,, 3 ,,	8200 ,, 32	,,
30*s* ,, 35*s*...	148 ,,	21½ ,,	Less than 1 ,,		
35*s* ,, 40*s*...	98 ,,	14½ ,,	More than 4 rooms		
40*s* ,, 45*s*...	54 ,,	8 ,,	4 or more persons to 1 servant... ...	7100 ,, 27	,,
45*s* and over	34 ,,	5 ,,			
	685 ,,	100 ,,		26,000 ,, 100	,,
			Families with female heads	3100	
			Employers' families and servants ...		
				29,100	

According to the sample tested, 34 per cent. earn in an ordinary week less than 25*s*, besides being out of work, more or less, in winter, and may be compared with the 41 per cent. who live more or less crowded in their homes.

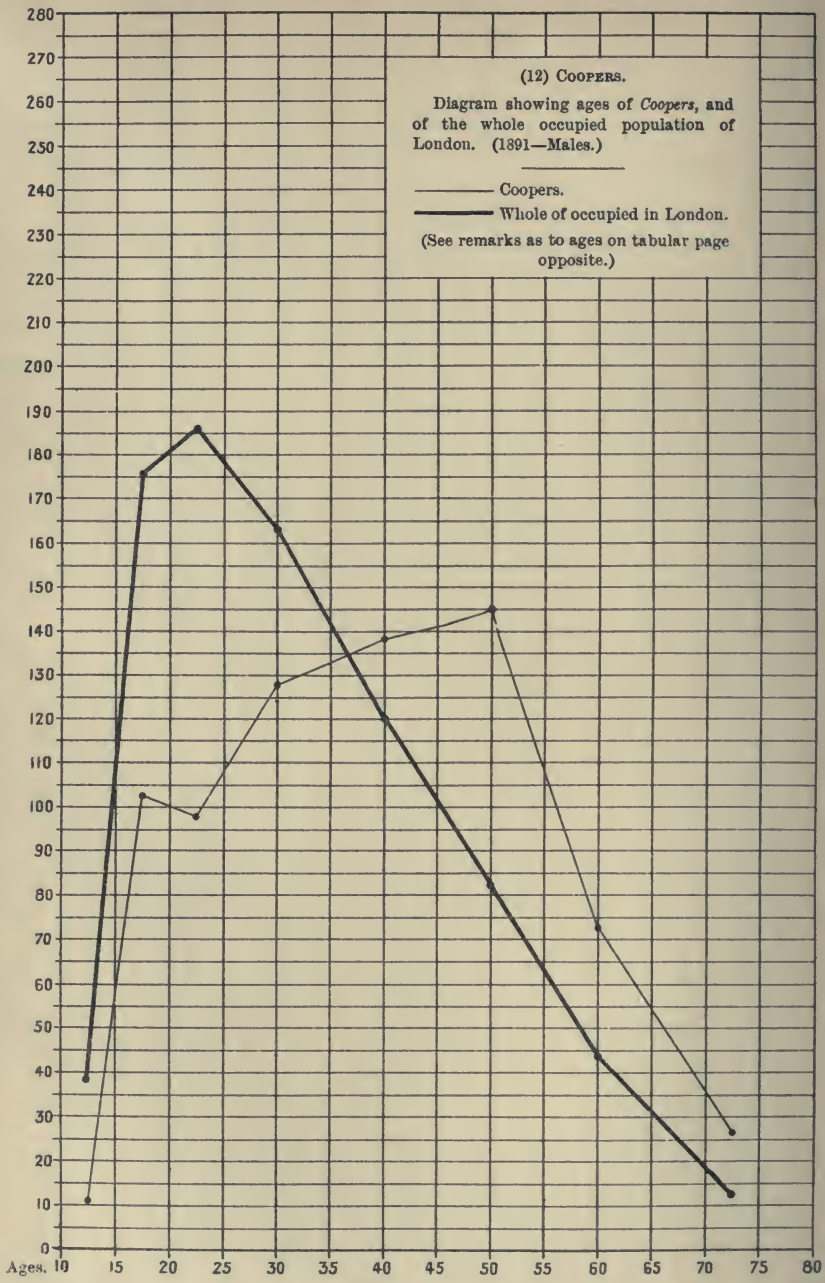
* It is to be remembered that the particulars of earnings were in this case furnished by the Trades Union officials, and not by the employers.

Next, 38 per cent. earn from 25*s* to 35*s*, as compared to the 32 per cent. who live only one or two persons in each room; and finally, we have 27 per cent. earning 35*s* and upwards, who compare exactly with 27 per cent. of the central classes.

Owing to the "insecurity of tenure" before noticed as existing among artisans of this section, a large number of them live at great distances from their work and do not trouble to shift their lodgings so as to be near it. Moreover, rents are exceptionally high in the neighbourhood of their workshops. It is, therefore, no uncommon thing to reckon from 2*d* to 4*d* a day in 'bus or railway fares. Meals are generally taken in the shop.

The wives of hammer-men and painters often help their husbands by doing a little home work, and even those of the higher-class artisans do not always object to increasing the weekly income by such means.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER III.

COOPERS, &c. (*Section* 12.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Cooper	8	303	2392	597	3300
(2) Lathrender .	—	19	235	41	295
TOTAL....	8	322	2627	638	3595

From 45 to 55 is the leading age for coopers, and few young men are entering the trade. An excess of elderly men, such as the diagram shows, is generally a sure sign of a declining industry, though in this case it may result partly from the strict limit set by the trades unions as to number of boys allowed to be employed.

Distribution.

E.	N.	W. & C.	S.	Total.
1408	347	288	1552	3595

Details of Occupations (from the Census Dictionary).

(1) Hoop-maker, bender, stave-maker, dealer, wet-cooper, dry cooper, vat builder, bucket-maker.

(2) Wooden fence and hurdle-maker.

Enumerated by Families.

Sex	Males		2566
	Females		5
Birthplace	In London	69 %	1771
	Out of London..	31 %	800
Industrial Status ..	Employer	6 %	151
	Employed	90 %	2321
	Neither	4 %	99

Heads of Families, 2571.

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	2571	2907	6913	54	12,445
Average in family ..	1	1·13	2·69	·02	4·84

Classification.

Numbers living in Families.		%
3 or more to a room	1413	11·4
2 & under 3 ,,	3065	24·5
1 & under 2 ,,	3722	29·9
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	4130	33·2
Less than 4 to 1 servant and 4 or more to 2 servants	49	·4
All others with 2 or more servants ..	12	·1
Servants	54	·5
	12,445	100

	Inner.	Outer.	Together.
Crowded..	38 %	33 %	36 %
Not ,, ..	62 %	67 %	64 %

Distribution.

East ..	Inner 3367 / Outer 1367	4734
North	Inner 68 / Outer 1077	1145
West ..	Inner 96 / Outer 441	537
Central	Inner 430	430
South-East	Inner 1716 / Outer 1862	3578
South-West	Inner 1105 / Outer 916	2021
		12,445

Inner 6782, or 54 %
Outer 5663, or 46 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Cooper, hoop-maker, bender	139	1	303	2744	6	106	1	3300
(2) Lath, wooden fence, hurdle-maker	17	—	19	234	—	25	—	295
Total	156	1	322	2978	6	131	1	3595
	157		3306			132		

Proportion of Employers to Employed—1 to 21

Introductory.

Coopering is the industry concerned with the manufacture and repair of casks and barrels.

A barrel is a very ancient device, and one of peculiar perfection. Both from within and without its form gives it a great power of resistance to pressure and a maximum of capacity: and further, it can be rolled and moved easily from place to place, either when lying on its side, or if slightly tilted.

Coopers live and work all over London, but are to be found in their greatest numbers in the east, south-east, and south-western districts.

There are, roughly speaking, two kinds of casks—those which hold liquids and those which hold solids—and according as they manufacture the one or the other, coopers fall into two classes: (1) Wet coopers, employed on casks for wine, beer or spirits, &c., and (2) Dry coopers, who make those used for packing bottled ales, cement and other articles not liable to leak.

Wet Coopers.

Wet, or "tight" coopers as they are often called, are the most skilled workers in the trade. They have to make a cask that is both water-tight and capable of resisting the searching forces of fermentation.

Process of work.—The men work standing, and generally in their shirt sleeves, with an apron tied round the hips, and no braces. They split the wood into staves (this is often done for them by machinery), and fashion it at a block, which is a stout stump standing about three feet out of the ground. This block has a peculiar significance; for a cooper, when out of work, goes in search of a "block" and not of a "job," as in other trades.

To make a tight cask, the staves (which are generally of Quebec oak for spirits, and European oak for brewer's

work), sawn to the proper length, are "backed" and "hollowed," that is, shaved smooth on the back and slightly scarfed out on the inside. Then they are jointed or planed on the edges—rather more being taken from the inner than the outer part of the surface, to allow of the barrel assuming an even circular form—and finally the two ends of each stave are tapered to give the shape or "bilge."

Except when making a vat, a cooper does not use an ordinary plane. He uses a "jointer," which, in effect, is a long plane fixed on a slanted rest, with its cutting edge uppermost. Down this he pushes the stave, thus reversing the ordinary operation of planing. As soon as the staves are fashioned and ready, they are raised, *i.e.* made to stand up all round the inner edge of an iron hoop. A stout wooden "truss-hoop" of ash, called an over-runner, is then knocked down over the embryo barrel as far as it will go. But as the staves will not bend easily when cold, they are heated by placing in the centre of the barrel a brazier or cresset filled with shavings, and lit from the top to burn downwards. When the staves are warmed through they are gradually forced into the required shape by the hammering down of more hoops of different sizes, first from one end and then from the other. The stave ends are then rounded off and grooves made inside to receive the "heads," as the flat top and bottom pieces are called. When these have been inserted the temporary wooden hoops are replaced by permanent iron ones, and the cask is complete. Heads are sometimes planed and bevelled by machinery, but are more often made by apprentices, and all the rest with wet coopers is at present hand work.

Coopers all work under a roof, but the side walls, if there are any, are generally as open as possible, to permit the smoke of the shavings to escape more freely than is allowed by the corner chimneys, large though they are.

Earnings.—Brewers' coopers and tight coopers generally can count upon making an average of 40*s* per week

throughout the year. Quite four-fifths of the tight coopers are piece workers; but a little repairing and vat examining work is paid for by the hour, and so is any out-of-the-way work for special orders. Time rates are as follows:—7*s* 6*d* to 8*s* 6*d* per working day of 9 hours for the first five days of the week, and 6 hours for Saturdays, meal times excluded, or 7*s* per day of 9 hours, inclusive of meal times, and a full day's pay for Saturday. Piece-coopers moved from a piece to a day job are paid 1*s* per hour for the first two hours, and 10*d* for each additional hour. Weekly engagements may be mutually agreed upon between masters and men. These are the rates of the Trade Society, and are effective.

In addition, a cooper is allowed at the end of each week to take away with him a bundle of the chips he has made, but this bundle may not be more than 3 ft. in length by 2 ft. in diameter.

Seasons.—November 1st to June 1st are likely to be busier than the summer and autumn months, because of the brewer's demand for casks. By June 1st the different refreshment houses are stocked for the thirsty season, and coopers are slack, as they are also about Christmas time. But as soon as the barrels are empty there are repairs to be done, and work is brisk again.

Hours of work.—In winter (November 1st to March 1st) the hours are from 8 to 7 for five days, and from 6 to 1 on Saturdays. In summer, work begins at 7 and ends at 6.

These are the regular hours of a full working week, but by local arrangement the day sometimes begins later and ends later where this suits the habits of the men.

Overtime is very exceptional and is only resorted to when it is absolutely necessary to get work finished. The decree of the Trade Society that masters must pay 6*d* per hour beyond the ordinary *piece* rates for every hour's overtime, seems to have abolished systematic overtime altogether. Weekly men may work overtime if they care to do so at such rates as may be agreed.

Training.—The apprentice system is strictly enforced for the legal seven years. Every cooper is allowed one apprentice, who must be the son of a cooper, every master two or every firm three, but no more. A good many of the men work with apprentices under them, and the money they then draw is considerably above 40*s*, but as a rule they are not so keen to have apprentices as might be supposed. For the first twelve months much of a boy's work is worse than useless; the journeyman's time is wasted and his earnings lessened. Hence the unwillingness. But after a year, a sharp boy can put a good deal into the pocket of his man, who will earn up to 60*s* or even 70*s* in a week, if they both work hard. A boy and father, both quick, have been known to earn as much as £6 or £7.

The boy himself gets very little to begin with; as a rule only about 1*s* 6*d* per week in his first year, 2*s* in his second, 6*s* in his third, 10*s* in his fourth, and afterwards two-thirds of his earnings. After thirty a man is said to acquire a good average style which never fails him, unless eyes or health give way.

Old age.—The working capacity of a tight cooper fails very rapidly after fifty years of age. It is very hard work, and older men lose the power of working quickly. They will not earn more than 30*s* where previously they had been making 35*s* to 40*s*. The work is healthy, and what they turn out is good, but there is not so much of it.

Rundlet coopers, who make small wine and spirit casks, powder kegs, and oyster barrels, are not quite so highly paid, but can count upon getting 30*s* to 35*s* per week throughout the year.

Molasses coopers, or those who make casks for molasses, syrups, pickles, &c., are busy in the autumn packing goods for the Baltic trade, and can make as much as 40*s* or 50*s* when busy, but at other times they have to be content with 15*s* to 20*s*. They have suffered owing to the increased use of beetroot in place of cane sugar, and to the fact that

so little sugar is refined in London now, as compared with ten or fifteen years ago.

Oil coopers do very little new work. New wood absorbs so much oil that old wine and beer casks are generally used. They need not be quite so skilled as brewers' coopers, for oil has no fermenting power. They earn an average of 35*s* and 40*s* on piece, and can make as much as 47*s* to 54*s* in a busy week, but this would be quite exceptional.

Dry Coopers.

These are not such skilled workmen nor so highly paid as those of whom we have already spoken. Much of their work is done by machinery. The staves are generally cut and trimmed in this way and then "fired" and trussed up by the coopers. For dry-work it is not nearly so important that the staves should fit very exactly, and therefore a "dry" need not be such a skilled man as a "tight" cooper. They are generally piece workers, and the hours are usually from 8 A.M. to 6 P.M., but vary slightly with the different shops. For a full week's work they would get between 35*s* and 40*s*, but they cannot be certain of regular work, and one large master gave it as his opinion that an average man would not get more than forty weeks' work in the year.

Dry coopers do not shift to other branches, for they are very seldom able to do tight work, whereas a tight cooper often turns in a slack season to dry work.

The average earnings for the year would certainly be under 30*s*, and probably between 25*s* and 30*s*. Men need only serve a five years' apprenticeship to be fully qualified, and often have not served their time at all. They are, however, capable workmen until late in life, and there are old men in the trade still able to earn 18*s* to 20*s* per week at piece-work rates.

In many cooperages a certain number of "first-class" labourers are employed who often pick up a knowledge of the work and may have returned themselves as coopers. These men blow off or test the casks by filling them with hot water, they varnish and paint the top and bottom chines or rims, and cut the bung holes. They earn 24*s* to 26*s* as a regular time-work rate, and are often allowed to do some jobs on piece, which bring up their earnings to about 28*s* or 30*s* per week.

Dock Coopers.

The coopers employed at the Joint Committees' Docks are practical artisans, but they have to deal rather with the management, repair and storage of full casks than with new work.

The London and St. Katharine, the East and West India, the Victoria and Albert and the Tilbury Docks each have a master cooper and staff. The staff consists of a given number of permanent and extra men. The permanent men are all time workers and get from 32*s* to 37*s* per week. The extra men are casual to a certain extent, that is, they are taken on and discharged as the occasion demands. They are sometimes day and sometimes piece workers, and work according to the price list issued by the Dock Company. The majority of them are certain of regular employment, and, if worthy, may look forward to being taken on to the permanent staff as vacancies occur. On day work they earn a standard wage of 32*s*. Sometimes piece-work is combined with day-work for both classes, and earnings of permanent men rise to 40*s* and more where there is much responsible work, as at the Rum Quay, and to 35*s* and 36*s* for the casuals.

In winter, *i.e.* from November 1st to February 28th, the full week consists of forty-two hours, beginning at 9 A.M.

and ending at 4.30 P.M. In summer men come to work an hour earlier for the same rates of pay: in both cases for six days in the week.

The short hours at the docks give the men some spare time, which they are said to employ at home in doing odd jobs in the white coopering line.

White Coopers.

White coopers are among the poorest and least regular of the men in this section. They make fancy goods and such things as stable and ships' buckets, washing tubs, churns, butter tubs, &c.; but galvanized iron-ware has supplanted wooden buckets, and margarine is imported in such well-made tubs that when empty they always find a sale, and consequently less new work is now wanted.

The ends of staves sawn off by other coopers are very much used in this work. Much skill is needed and the work is done by many small master men. The largest house in the trade has but nine permanent men. All work is piece-work, and the yearly average in this branch is certainly under 25*s*. For a full week of sixty hours a steady man can make as much as 35*s* or 37*s*, but 20*s* to 27*s* seems to be the more general rate of earnings.

As a body the coopers are very independent in character. They rove from shop to shop for no apparent reason except a desire of change. One man who was given as a fair sample of a cooper and a good workman had been in twenty-seven jobs in three years, and since his marriage had changed house twenty times.

They are very sociable among themselves and exclusive as regards others, and at one time were noted as hard drinkers. There were and are great temptations arising out of employment at breweries and wine stores; and an idea was once prevalent that a tight cooper did well to

drink because he would thereby indirectly benefit his own trade.

But there has been a great change for the better, and it is admitted on all sides that the younger generation have neither the same inclinations nor temptations that their fathers had. The School Board seems to have been the chief factor in this result, and the Customs' authorities have helped by insisting that old casks should be cleansed of every suspicion of spirit before leaving the bonded vaults.

Machinery.—At the present moment (1893-4), there is great uncertainty among both men and masters as to the probable success of the new machinery for producing "tight" work that has lately been started by a combination of the two largest and oldest firms in London.

The determined strike and success of the tight coopers in 1891, when they obtained a rise of more than 10 per cent. on all piece-work rates, first led to the adoption of machinery. The society will not yet let their men work on machine-made casks, and therefore non-union men have been employed.

It is said that the work is too varied in character, and that no machine can allow for different degrees of hardness of different woods; that great fortunes have already been lost in similar attempts undertaken thirty and more years ago; and that London workmen are good and their charges not high. On the other hand, the masters are confident of success, and point to the excellence of foreign machine-made work.

Hoop Benders.

These are a very small body of men in London. There are certainly not fifty of them. The largest house in the trade has not more than eight workmen. All those employed are men, and their business is to bend split wood

into hoops to put round casks or barrels either as truss hoops or to cover iron ones, or in some cases as a substitute for iron. Underwood, generally hazel or ash of ten years' growth, is cut by the woodman and assorted for length, and then handed over to other country labourers to split and shave. After this it is ready for the benders, and comes to London (and elsewhere) in bundles of different sizes known as "Fourteen feets," "Middlings," "Longpipe," "Short-pipe," "Hogshead" (which are used chiefly for sugar casks and packing hogsheads), and other sizes known as "Barrel," "Kilderkin," "Firkin," "Long pink," "Five feets," "Short pink," "Tumbril," "Threes," "Twos," and "Ones" —referring to three, two or one gallon casks—for use in dry and tight work of every sort.

The hoop-bender at work chooses out two lengths of wood and bends them together between a pair of iron jaws until they fit inside a standard hoop called a "shive"; then the ends are fixed with wire or twigs, and the hoop is ready for use. The actual bending is generally hand-work, but is sometimes done by machinery.

All work is done on piece. Winter is more busy than summer to supply the demand of coopers on new work, but employment generally is rather casual, and there are several men who do other work and only come back to bending when that is brisk. Hoop-bending is hard work, and the men must have strong arms, and know by experience how much strain a given piece of wood will bear. An average man in a regular situation will earn 28*s* per week. In slack times if a man can get employment at all he must not expect more than 15*s*, or half a week's work, but, when very busy, a young and fast worker has been known to make over 40*s*. 1854 was the *annus mirabilis* for both coopers and benders, so much merchandise of one kind or other being then packed in barrels and sent off to the Crimea.

Lathrenders.

Lathrenders are also included in this chapter, though they are in reality more closely allied with the men in the building trades, and have already been incidentally mentioned in that connection.

The principal use for laths, which are thin strips of red pine, is in the preparation of ceilings and partitions of dwelling-houses. These strips are nailed across the joists or rafters of a building and afford a holding for the plaster or cement which makes the surface of the wall or ceiling, and which, in its turn, is finally covered with paper, paint, or whitewash.

Timber merchants formerly had nearly the whole of the trade in their own hands; and they sold directly to the plasterers, who used always to "drive" or fix the laths themselves. Now foreigners have cut into the English trade with the straighter but less durable steam-sawn laths, which can be imported so cheaply that the London hand-rent article has had to yield, and the industry is now a dying one. Those who still employ lathrenders are lime and cement and brick merchants; and there are in addition a number of small masters all over London who have been able to earn a livelihood and retain a small portion of the trade by watching closely the needs of the builders, and supplying laths and men to drive them at one and the same time. Those who fix the laths are known as lathers and are distinct from lathrenders.

Lath wood comes chiefly from Cronstadt and Dantzig in the log. From the Swedish ports laths are imported, cut, and ready for use.

The raw material is of different degrees of hardness, and some lengths, therefore, are more difficult to rend than others. To obviate the chances of favouritism, there is a custom in the trade of drawing lots for the different pieces

at the beginning of the day. Once drawn, a man is bound in honour to finish his task, even though there is but little money to be made out of it after a hard day's work.

All work is piece-work, and the rates of pay vary slightly in the different shops. The union has a price list, but it is not in force except in a few places.

A fast worker can average from 35*s* to 40*s* in a full week, and a slow man from 17*s* to 20*s*; while 25*s* to 30*s* would about measure the average earning capacity.

These amounts represent nominal wages only, and the actual earnings of an average man throughout the year would probably work out at very little over 20*s* per week.

The normal week is one of fifty-six or fifty-seven hours, but both longer and shorter days are worked upon occasion. The seasons follow the building trade, and in winter employment is difficult to find.

Apprenticeship, with legal indentures for five or seven years, was formerly the only means of entering into the trade, and every boy admitted was either the son or near relation of a lathrender. Now, however, no one is being taught, and the men, both in and outside of the trade society, do their best to prevent any others from entering the trade.

The renders are a steady set of men. "But when I was a nipper, they was a nobby lot," as one man said.

They bear the mark of their calling in two strongly-marked corns on the first and second joints of the left thumb, which they use in the process of "felting" or splitting up the laths.

Trades Unions.

Subjoined are particulars of the trade organizations :—

Numbers in the London Trade.		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
3300	2744	The London Philanthropic Society of Coopers (1821).*	700	1315	Offer Benefits. Enforce price list and Apprenticeship. Union will not work with non-union men. Relations with masters rather strained owing to introduction of machinery. Number of apprentices limited.
		The London Hand-in-Hand Society of Coopers (1824).	200		Offer Benefits. In case of dispute arbitrate on regular system. Relations with masters good. Give Pension.
		The London Amalgamated Society of Coopers (1889).	400		Only Strike and Death money given. Equal number of masters and men settle disputes. Very friendly with masters.
		The Hoop-benders Philanthropic Trade Society (1866).	15		Out of work, Sick, Death, and Pension Benefits. Union and non-union men work together.
295	234	The Lath-renders' Trade Society, 1892.	107	107	Offers dispute pay only.
3595	2978			1422	

Thus out of a total of 3300 persons engaged in the coopering and hoop-bending industry, 2744 are journeymen over 20 years of age, and of this number 1315, or 48 per cent., are members of a trade organization; while of the lathrenders 107 out of 234 are organized.

There is also a London Master Coopers' Association,

* Since writing the above we understand that this Society was allowed to lapse on October 15th, 1894. A new Union has, however, been organized in its place under the title of "The United Society of Coopers."

and an Association of the Foremen and Permanent Coopers employed at the Docks.

Subscriptions to the Men's Societies range from 4*d* to 10*d* weekly, and presumably benefits vary accordingly, but the Coopers' Societies were not willing to state exactly the amounts offered.

The "Philanthropic" and the "Hand-in-Hand," or Molasses Coopers' Society, are the two oldest and most powerful of all those mentioned above. The first is composed entirely of tight coopers, and insists effectively that all their members shall have served a seven years' apprenticeship; the second admits both tight and dry coopers, and is not so strict on the apprenticeship question. The "Amalgamated" was first started in 1889 to organize all the lower branches of coopers not admitted by the other two Societies. The rundlet coopers are the backbone of this Society, which has two branches in London and another in Rochester. Oil, lead, and cement coopers, and the extra men at the Docks also belong to it. This Society was received with great coolness by the other two upon its formation, but has since been admitted to the Mutual Association.

All three Societies have one or more price lists of their own, and are strongly in favour of settling new prices and disputes by the mutual agreement of an equal number of masters and men. They meet every quarter to discuss any question of interest to the trade, and it is the duty of each secretary in turn to call a meeting.

The "M. A.," or Mutual Association, is a federation of nearly all the Coopers' Societies in the kingdom. It was instituted in 1878, and has a total membership of 5499 persons (November, 1893). Each branch is totally independent as to rules and customs, but members of any branch are received at once by other branches, provided they are willing to conform to the rules of the locality in which they settle. Each year a town is chosen as the head

centre for the M. A., and the branch in this town appoints the general secretary for the year, and its executive acts as the executive of the Federation. At irregular intervals a congress is held, to which delegates are sent, and every quarter reports, forwarded from the different branches, are collated and printed in a summary issued by the general secretary for the year.

The small Hoop-benders' Society is now purely philanthropic in its aims. It is the third Society of its kind; the first apparently began in 1800, but it has not been found possible to verify this date.

The lathrenders used (1890) to form part of the Gasworkers' Union, but decided in 1892 to set up for themselves. Their members are mostly those employed on better class work in the West End. In the East End of London they have not been able to make any way.

At the Docks, pensions are given to those coopers who are superannuated.

Wages Statistics.

Of the 2978 adult males employed, we have information as to earnings for 367 employed by sixteen firms as under:—

General Coopers	9	=16 firms usually employing 411 persons, of whom 384 are adult males, but 17 of these belong to other sections, as carmen, &c.
Brewers and Wine Coopers	4	
White Coopers	2	
Oil Coopers	1	

The earnings of these men in an average week are as follows:—

Below 20*s*.	13, or	4	per cent.	Below 30*s*, 28½ per cent.
20*s* to 25*s*.	16	,, 4	,,	
25*s* ,, 30*s*.	75	,, 20½	,,	
30*s* ,, 35*s*.	77	,, 21	,,	30*s* and upwards, 71½ per cent.
35*s* ,, 40*s*.	108	,, 29½	,,	
40*s* ,, 45*s*.	39	,, 10½	,,	
45*s* and upwards	39	,, 10½	,,	
	367	,, 100	,,	

Five firms, employing an average of 174 persons, made separate returns for busy and slack weeks. These show a slight difference in earnings—33*s* average in slack as compared to 34*s* in busy weeks; the numbers employed falling off nearly 15 per cent.

The lads employed earn from 5*s* to 17*s* per week, the largest proportion being paid about 10*s*.

Social Condition.

2320 of the adult men employed in these trades are counted as heads of families, and are the men whose earnings and social condition we are attempting to determine.

According to the sample tested only 8 per cent. of the employees earn in an ordinary way less than 25*s* a week, but 38 per cent. of the population with which we are dealing live under more or less crowded conditions. On the other hand, we find 41 per cent. earning from 25*s* to 35*s*, as compared to 32 per cent. of the upper working class living with one or two persons in each room, and 50 per cent. earning 25*s* or more as compared to 30 per cent. of the central class as follows :—

Comparison of Earnings with Style of Life (Coopers).

Earnings of sample tested.			*Classification of population.*		
Below 20*s*...	13, or	4 per cent.	3 or more in each room,	1400, or	12 per cent.
20*s* to 25*s*...	16 ,,	4 ,,	2 to 3 ,,	3000 ,,	26 ,,
25*s* ,, 30*s*...	75 ,,	20½ ,,	1 ,, 2 ,,	3750 ,,	32 ,,
30*s* ,, 35*s*...	77 ,,	21 ,,	Less than 1 ,, More than 4 rooms 4 or more persons to 1 servant	3550 ,,	30 ,,
35*s* ,, 40*s*...	108 ,,	29½ ,,			
40*s* ,, 45*s*...	39 ,,	10½ ,,			
45*s* and over	39 ,,	10½ ,,			
	367 ,,	100 ,,		11,700 ,,	100 ,,
			Employers' families and servants... ..	700 ,,	
				12,400	

The great discrepancy between these figures points to

the existence of a large class of casually employed men not represented, and perhaps impossible to represent, in such returns as ours. Men who call themselves coopers, but whose skill does not go beyond the rough patching of a broken tea-chest; or men broken down by age or ill-health who have not energy enough to leave a decaying trade; or skilled men of irregular life irregularly employed, of whose high wages a large part never reaches their home.

If indeed, as seems probable, many of the tea coopers have yielded to the temptation of ranking themselves socially somewhat higher than they have a right to, and have returned themselves as "coopers" pure and simple, then we have at once to deal with a considerable number of men who are in receipt of dockers' wages only, and who, when not actually coopering, are employed as wharf labourers.

Their work, which consists in unfastening and nailing up the boxes in which tea is imported, requires but little skill, and can be learnt in seven or eight days. Regular men so employed can be certain of 24*s* per week throughout the year. In winter they may expect to make rather more than 24*s* owing to the prevalence of overtime, but this again is balanced by short time in summer. Below the regular men there are a good many who cannot find work at all, except in winter, and in summer must seek it elsewhere, and take their chance of finding employment in the building or other summer industries.

Coopers proper, are, as we have seen, apt to change from situation to situation, therefore they do not often live near where they work, unless indeed they belong to the few who may happen to have a practically permanent berth in a brewery. As to meals, they either bring their dinner with them or buy something in the immediate neighbourhood of the cooperage, which they then warm or cook over a fire of wood shavings in the spacious "chimney corner," where, during work hours, the barrels are trussed

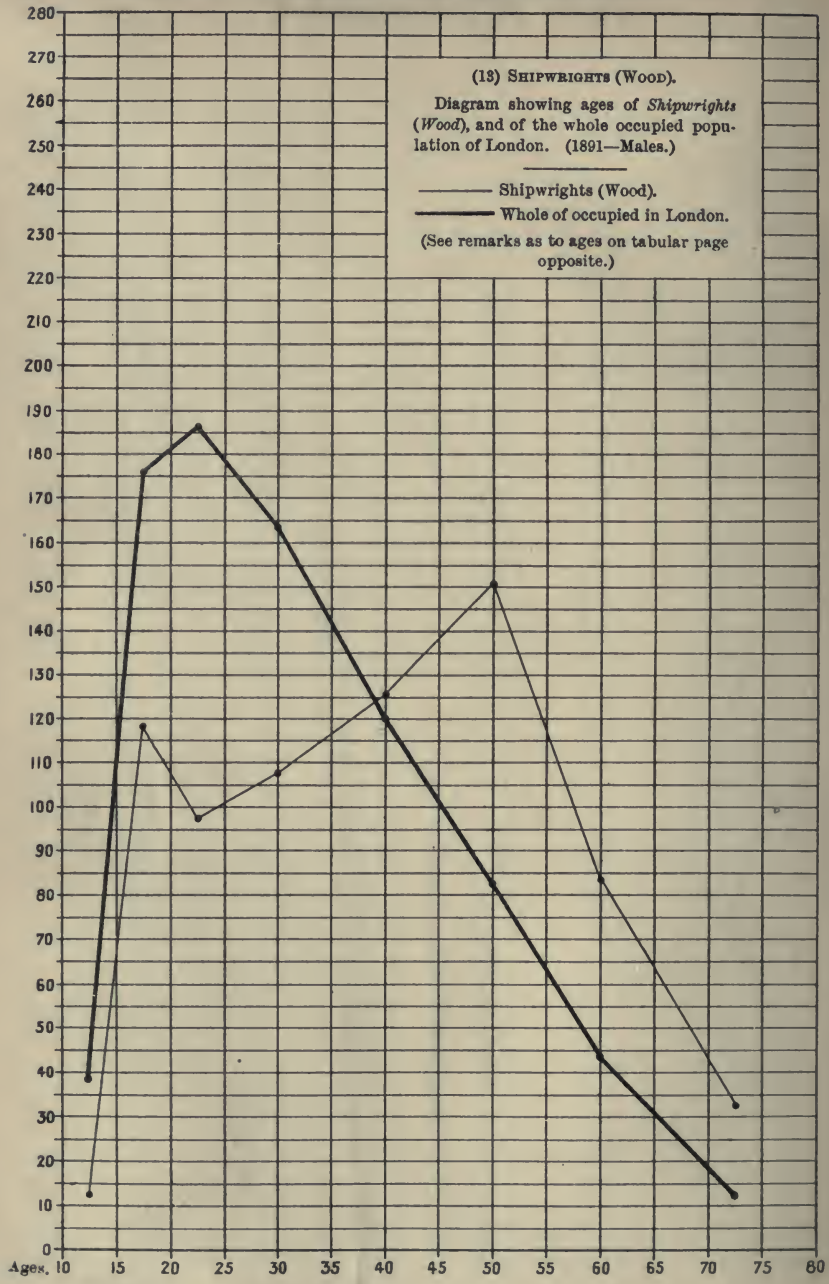
up. So, too, they make their own tea or coffee in the afternoon, and generally use a publican's quart can for the purpose. As they are mostly piece workers they are at liberty to go out during the day and probably not infrequently obtain further refreshment at the neighbouring "bar." In some cases the presence of a good "public" or "coffee-house" will induce them to feed out altogether; for, as a rule, men are willing to pay rather more for their dinner in return for the increased comfort, change of scene, or chance of reading a newspaper which is thus afforded. This mode of life undoubtedly involves extra expense, and less money finds its way to the home. Thus many converging reasons explain the discrepancy between the average wages of the men for whom we have the information and the general social condition of those who call themselves coopers.

There is nothing unusual or expensive in a cooper's dress. Aprons of moleskin or leather are general, and in breweries, or in the docks, overalls of the same material are worn.

Nearly all the men employed in shops are members of their trade society, and a good number of those outside also, while most men, whether unionists or non-unionists, belong to some other clubs (shop clubs, slate clubs, benefit societies, &c.) which will absorb from 1*s* 6*d* to 2*s* of their weekly earnings.

Wives of skilled men need not earn money, but out of the body of coopers there would seem to be a large number (calculated by a practical cooper as over 30 per cent.) whose wives do actually contribute more or less towards the expenses of housekeeping by their needle or by washing, or the keeping of a shop, or in other ways.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER IV.

SHIPWRIGHTS, BARGE AND BOAT BUILDERS. (*Section* 13.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Shipwright (Wood).....	7	180	1023	271	1481
(2) Shiprigger, Sail-maker ..	25	53	506	195	779
TOTAL....	32	233	1529	466	2260

Here we have the sure signs of a decaying trade. There are considerably more men at 45 to 55 years of age than at any other period of life, and as many over 65 as between 20 and 25. This is true of each division. (*See* diagram.)

Enumerated by Families.

Sex	Males		1696	Heads of Families, 1704.
	Females.....		8	
Birthplace	In London	60 %	1016	
	Out of London..	40 %	688	
Industrial Status ..	Employer.....	7 %	116	
	Employed.....	89 %	1523	
	Neither.....	4 %	65	

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	1704	1915	4616	62	8297
Average in family..	1	1·12	2·71	0·04	4·87

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
1242	48	64	906	2260

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Ship, boat, barge-builder, naval architect, draughtsman, shipyard labourer, ship-breaker, boat carpenter, caulker, cementer, pattern-maker.

(2) Mast, yard, oar, block, ship's tackle, tank maker, ventilator-maker, sail-maker, ship's store dealer.

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	378	4·5
2 & under 3 ,,	1457	17·6
1 & under 2 ,,	2832	34·2
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	3500	42·2
Less than 4 to 1 servant, and 4 or more to 2 servts.	61	·7
All others with 2 or more servants ..	7	·1
Servants	62	·7
	8297	100

	Inner.	Outer.	Together.
Crowded..	39 %	18 %	22 %
Not ,, ..	61 %	82 %	78 %

DISTRIBUTION.

East ..	Inner	1764	4522
	Outer	2758	
North	Inner	15	166
	Outer	151	
West ..	Inner	19	139
	Outer	120	
Central	Inner	13	13
South-East	Inner	1018	2614
	Outer	1596	
South-West	Inner	252	843
	Outer	591	
			8297

Inner 3081, or 37 %
Outer 5216, or 63 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all Ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Shipwright, barge-builder (wood)	69	1	180	1193	6	32	—	1481
(2) Shiprigger, mast-maker	29	—	20	303	—	20	—	372
(3) Sail-maker	21	—	33	317	25	11	—	407
TOTAL.....	119	1	233	1813	31	63	—	2260
	120		2077			63		

Proportion of Employers to Employed—1 to 17.

Shipwrights, &c.

All the men considered in this section are wood workers, with the exception of caulkers, riggers and sail-makers. Shipwrights, barge builders, boat builders, caulkers, mast, block and oar-makers, riggers and sail-makers, are one and all connected with the construction and fitting out of wooden vessels, and as wooden vessels on the whole have had their day, so too have those whose prosperity depended on them. Iron has replaced wood, and the wood worker has had to yield to the shipsmith and hammer-man, the boiler-maker and rivetter, while as a motive power sail has given way to steam. In barge building, however, and even more completely in boat building, the older methods and older material still hold their own.

Thus the decline of the shipwrights upon the Thames began with the introduction of iron ships. They might have done a great deal of the new work; but they thought the new ideas so unimportant and unlikely to last that they took little interest in them, and, to get the work done, the masters were obliged to take on all kinds of men from all trades and all parts of London. The shipwrights have long ago found out their mistake, and would now be willing to undertake iron-work, but the boiler-makers who stepped in have added to their title "and iron-ship builders," and are successful in enforcing their claims, although the shipwrights do not allow that the boiler-makers have an exclusive or indeed any right to the work. With iron ships the shipwrights do, however, lay the keel and place frames and beams in position, and they also make the templets or patterns by which the iron plates are shaped. The plates themselves are cut and bent by men belonging to the boiler-makers' union, and all rivetting is done by them.

When working on wood, the shipwright's sphere is bounded by that of the joiner or carpenter. The shipwright does work on wood that is one-and-a-half inches thick or

more, anything under this thickness belongs to joiners. Thus a shipwright will put in the decks, while a joiner does the fitting up of the cabins. Shipwrights do the heavier and joiners the lighter wood-work about a ship.

The employers are generally themselves practical men, and are of two kinds, viz. "ship builders," or those who have building slips or a dry dock of their own, and "floating builders," or small masters who may have a shed on the river bank but do their work on the ship afloat in the stream.

When a ship in need of repair is sighted, the men know to which yard she will go, and follow their work accordingly. Winter is the busiest season, when heavy weather and fogs make collisions frequent; but work, depending upon such causes, is naturally very uncertain. A good man cannot be sure of more than eight months' employment in the year, and a second-rate man must join the ranks of casuals and pick up other work here and there where he can.

Most of the work is on piece, and the prices set forth in the price list issued by the union are strictly adhered to. On regular work a man can earn from 7*s* to 8*s* or 8*s* 6*d* for a day's work, which begins at 6.30 A.M. and ends at 5 P.M. in summer, and lasts from daylight until dark in winter. "Old" work pays better than new. On time the regular rate for the Port of London is 7*s* per day. Each day is divided into quarters, and no man may work for less than a full quarter if he gets a job at all. Allowing for the great irregularity of the work, it is doubtful whether among the best of them the average earnings can be put at more than 25*s* per week, a sum which will only represent a little over three days' work per week throughout the year, and clambering about ships is rough work, somewhat unsuitable to the stiffening joints of elderly men. But though rather hazardous, the industry is certainly a healthy one.

The union recognizes these evils but cannot afford to pay an out of work allowance; in case of accidents, however,

it offers 8*s* for 13 weeks, 6*s* for a further 13 weeks, and 4*s* for six months more, and a limited number of pensioners get 4*s* per week.

Barge Builders.

Of wooden barges there are several kinds: dumb barges (as described below), deck barges (which have no sails but are decked and have hatches like a ship), sailing barges and canal barges, or monkey boats, which are the familiar long and narrow canal boats with a hutch in the stern which serves as the home of the bargeman and his family. All these are made in London, but the dumb or swim-headed barges are essentially of London manufacture. These are large open barges without rudders, managed by one or two men who help to propel the boat with long oars. They ply up and down the river, moving on the tides and carrying chiefly coal or other heavy cargo.

A barge, like a ship, is built upon stocks; but instead of a mere keel, with stem and stern post, a complete bottom is constructed of very solid blocks of pine and elm. These, with the slanting bow and stern pieces known in barge building as the for'ard and after "swims," are lapped together and fixed with tree-nails (pronounced trunnels), and the joints filled with hair and pitch. The whole is then bound tightly with chains until every chink is closed, and the pitch hardening prevents all chance of leakage. After this a floor is laid on the bottom, and the "heads" or upright frames are fixed along each edge to receive the stout oak planking which forms the sides. The stocks, from which the barge is ultimately launched, are usually covered in with a long shed, open at the end nearest the river.

It takes six men working eight or ten weeks to produce a fair sized barge (one, say, of 150 tons). Winter time is the busiest season for building new barges, and summer and spring for painting and repairing old ones, so on the whole work is pretty regular.

Iron barges, though more expensive to buy, are cheaper in the end, for they do not require repairing every year; and they are now preferred, so that wooden barge building, like wooden ship building, is a decaying industry. This is recognized by the union, whose policy it is to make it very difficult for any young man to enter the trade, by refusing to receive any who have not served their time in London. Those who are admitted merely take the place of those who have died or retired, and the number is so calculated that it may just suffice for the existing demand.

Hours and Wages.—All is day-work, paid for at the rate of 9*d* an hour, and the full week is fifty-four hours; so that the earnings of a man in full work amount to £2. 0*s* 6*d* per week. There is very little overtime; where it is necessary the rate is 10½*d* per hour.

The Barge Builders' Union, which has a membership of four hundred, or four-fifths of all those employed, desired to prevent overtime being worked at all; they wished to set so high a price that it could never be to an employer's interest to keep men on after regular hours. But the masters, while acquiescing in time work at 9*d* and recognizing the full week of fifty-four hours, refused to pay 1*s* an hour as an overtime rate, and compromised by agreeing to give 10½*d*. When things are very busy extra hours are still resorted to, but systematic overtime has been abolished.

There are about one hundred employers and most of them pay the union rate, the chief difference between a union and a non-union house being in the amount paid for overtime. A few firms pay more than union rates rather than employ society men, and some others pay only 8*d*; in slack times, when masters can offer less employment, it is the young and the old who are the first to suffer. This is one of the consequences of a fixed day-work rate. Where work can be done on piece it matters but little whether your man be young or old, as he will be paid by results; but a master who knows that he must give 7*s* 6*d* to anyone he employs,

will naturally choose the men from whom he can expect the greatest amount of intelligent work, and such a one will probably be in middle life.

Labourers.—There are a few labourers in each yard, who might possibly return themselves in the census as barge builders, but would not be recognized as such in the trade. They are paid from 4*s* to 4*s* 6*d* per day: they shift the barges, tar the timbers and stir the foreshore so that the ebbing tide may carry off the mud and leave the ground clean for the repairers to work upon.

Boat Builders.

A boat differs from a ship or a barge in the character of its construction. The frames for a boat are steamed and bent into shape, instead of being selected with a natural bend or cut out of the solid and pieced together as for a ship.

There are three different kinds of boats made in London, namely the clincher, the carvel and the diagonal, known in the trade as "diags." The clincher—more commonly called clinker—built boats are made of overlapping planks clinched together with copper nails. Moulds are made according to the shape the boat is to take, and then the planks are bent and "clinched," and finally the internal frame is added.

This is the cheapest form of boat building and the greater number of pleasure and ships' boats are made in this way.

Carvel boats are stronger and generally larger, such as are used for small steam or electric launches. For these a beginning is made by building a stout frame to which the planking is afterwards nailed. The planks do not overlap, but are jointed and caulked.

Diagonal boats are built upon the same lines as carvel boats, but they are more carefully made and have a double structure of planks running diagonally to one another—whence their name. Ships' lifeboats are constructed in this way.

Racing skiffs come from above Kew Bridge: very few, if any, are of London manufacture.

Wages.—A boat builder generally works on piece at so much per foot of timber used, and earns a standing wage of 7*s* or 7*s* 6*d* per day. This he considers his minimum, and expects that after every job there will be a certain plus to his credit.

Employment is rather irregular and the trade is said to be leaving London owing to the expense of labour, but a man must possess considerable skill, certainly more than a barge builder, and yet his average earnings are distinctly lower and his chances of employment less.

Seasons.—Spring is the busy season for pleasure boats. For ships' boats there is a certain demand all the year through. Any fluctuation depends upon the state of the weather in the Channel: when the sea is calm ships do not lose their boats, but a heavy storm may cause a sudden rush at any time.

The work is light and there are plenty of good workmen past sixty years of age.

Caulkers.

It is only in London, Yarmouth and Her Majesty's Dock-yards that caulking is done by a distinct set of men; in other parts it is considered a branch of shipwright's work.

The business of the ship's caulker, working on wooden vessels and the wooden decks of steamships, is to make the seams tight. After the shipwright has planked the sides of the vessel the caulker caulks them. Threads of oakum are driven between the planks one at a time to the number of four or eight, according to the thickness of the planks. After this a coat of pitch is applied, and on the top of it a coat of tar. Decks of vessels are treated in the same manner.

Work is very irregular and grows less year by year, for not only are there fewer wooden vessels built, but even the decks of steamers are more often made of iron. There are no regular hours. The men have two houses of call, one at Poplar and the other at Rotherhithe, where, when not employed, they wait daily from 8 till 11 A.M., and from 1 till 3 P.M., after which time there is no likelihood of work. Taking it all round a man may not average more than two days a week. Nearly all the work is piece-work, and the rates are reckoned at so much per hundred feet, varying from 3*s* 9*d* to 17*s* 6*d*, and depending on the position and number of threads to be inserted. For time-work a wage of 7*s* 6*d* per day is paid. The majority of the men are said to be over fifty years of age, and there are very few if any apprentices entering the trade. All told there are not more than 160 caulkers in London now, where twenty years ago there were between 250 and 300.

Riggers.

Riggers take a ship from the builder's hands and can step her masts, whether of wood or iron, and fit her standing and running gear complete—in fact, they are concerned in the fitting up of every detail connected with a ship's sails, spars, anchors, chains and ropes.

Their full week's work consists of six days, beginning at 7 and ending at 5 o'clock, in which is included one-and-a-half hours per day for meals. The general rate is 36*s*. The men are engaged and paid by the day, and receive their money every evening. Sometimes they do job work, and then a contract is struck between master and man to do a certain given work for a certain given price. This is not very often done, but the union raises no objection to the practice. Twenty-six weeks is the average given for the work obtained by the riggers as a body this year (1893), but even in better times they cannot expect much more than eight or nine months.

Wire-riggers, a small and distinct body of men, have more regular work. Men who have been to sea often take riggers' work on shore.

Mast and Block-makers.

These, of whom there are about eighty in London, are a very small and declining body. All masts and spars were once of wood, but now most of them are of iron, and such blocks as are used are produced in Glasgow by machinery more cheaply than they can be in London.

There is a union, which is strong. The masters are small and scattered along the banks of the river; and, as all the men are unionists, they are able to enforce a wage of 7*s* per day for a week of fifty-seven hours in summer, and fifty-one in winter, exclusive of the dinner-hour. Winter, according to the rules, begins on November 1st, and lasts until February 14th.

Oar-makers.

Makers of oars are also a very small body, and becoming smaller; there are said not to be more than thirty in London, and these, unless they belong to a very select few who make racing-skiff oars, find it hard to earn a living. Barge and ship's boat oars used to be the staple industry, but now large oars come from Sweden and boat oars from New York in a finished state, and no longer require to be planed and made ready for use in London.

A young man, working very hard and long hours, would make ten pairs of oars in a week, and might earn £2; the average number is between six and eight pairs, for from 24*s* to 32*s*. But, as already indicated, work is not always to be had, and 21*s* is stated by a small master as a fair average for the weekly earnings of a medium workman throughout the year.

Winter is the busy time for barge oars, there being more

ships loading and unloading, and a great many coal barges about at this season; while summer is naturally the time when there is the greatest demand for racing and pleasure-boat oars.

Oars are made of ash, pine and spruce, and are fashioned roughly with a great axe, very like that used by mast-makers, and then finished with a plane. This axe is a formidable weapon, and a serious wound may be the result of an ill-directed blow either with it or with a barge builder's adze.

Sail-makers.

These used to be a large body: fifteen years ago, at least one thousand of them could find employment, but now there are not more than four hundred, and even for this number there is not sufficient work. Autumn and spring used to be the busy times, but now all seasons are slack alike. Such sailing ships as there are, cannot afford to come to London, and the steamships which do come, do not require sails, or so few that a very small number of men is sufficient to keep them fully supplied.

The sail-maker, when at work, sits on a short bench by himself; at his right hand there is a revolving reel of twine, and there are holes in the "trestle" in which his different tools are arranged.

The work requires some skill, and the man's posture is a cramped one as he bends over the sail on his lap, pushes his three-cornered needle through the rope and cloth, and forces it out on the other side with a leather shield or "palm" (so called because he wears it in the palm of his right hand). When through, the needle is taken in his left hand, and the thread is pulled tight against a thimble which he wears on his left thumb.

All work is piece-work, and in a full week of fifty-four hours, a good man can make as much as £2, but employment is so irregular that a man is lucky to get a fortnight's

job, and considers himself very fortunate if he has work that will last for five consecutive weeks.

General Remarks.

One peculiarity of these trades is that in all, except sail-makers, daylight is essential, and thus the working hours are limited in winter. It is also to be noted that all the work is casual with the exception of barge and boat building, and, without exception, every industry here considered has declined and is still declining. There is, however, here the peculiar interest which attaches to anything that has been great and has lost its greatness, and perhaps there may be also a warning to other trades, now prosperous, but which at any time may have to submit to a change of fashion or the introduction of new materials or better methods.

Sometimes the inevitable may spell ruin, but not always, since the future of any trade depends greatly on the adaptability of individuals and the foresight of its ruling powers.

The shipwrights, for instance, might now be building iron ships. At the time of their introduction they were the most suitable men for the work; but, like many others, they found it hard to believe that iron could swim to any purpose; they were prosperous then and imagined they could allow others to waste their time on what they considered unprofitable experiments. The boiler-makers stepped in and have secured their position; and the shipwrights now find it hard enough to get anything to do. The talent that once built "wooden walls" will now condescend to the humblest boat or barge, but the men find it difficult to get anything outside of the little that remains of their own industry. Not much is heard by the outside world of their misfortunes: they are proud men and have a history.

Riggers and mast and block-makers deserve no less pity: wire rope has taken the place of hemp, and iron spars and masts are used instead of wooden: in both cases iron lasts very much longer than hemp or wood, and needs fewer repairs. Sail-makers, too, have had to suffer from the introduction of steam power. They might have found relief in sack and tarpaulin making if too high a price had not been set. Their society would not allow of the men receiving 7*d* instead of 7½*d* per sack; the masters declined to pay 7½*d*, and now women have taken the work at a much lower rate, and this means of earning a livelihood is lost to the men, although it is not desirable work for women, being heavy and requiring some strength.

Barge builders, again, demand a price for their work which, if not absolutely too high, appears to be rather high relatively to other trades. To an outsider barge building seems to require only a moderate amount of skill on the part of the workmen, and there are besides no extra expenses; for example, outward appearance is not of importance, and there is no need of wearing smart clothes on week-days; yet they earn as much and more than many highly skilled artisans, and that at a day-work rate. No objection could be raised on this score were it not that there is no particular necessity for so rapid a displacement of wooden in favour of iron barges as is now occurring, and which is said to be a question of comparative cost. Iron barges, as before stated, cost little for repairs, and masters therefore are willing to pay a rather higher price at the outset. But an iron barge is at a great disadvantage in a collision such as may occur on the crowded river, for should even a small hole be made below the water line, she will sink at once; whereas a wooden barge has a greater elasticity and will shiver and recover from a very heavy shock, or, if a rent be made, she can be run ashore before she sinks, and her cargo be saved. Were the price of a wooden much less than that of an iron barge, there are

certainly many who would still use them, and the decline in the trade might be more gradual.

It is, however, easy enough to complain after the harm has been done, and it seems hard to rake up old mistakes to those in trouble. Nevertheless these are actual facts and serve to point a moral. They show how much prudent watchfulness is necessary to those who have the ruling hand in trade societies.

Trades Unions.

A list of the trade societies is subjoined. There is also a Master Riggers' Association, founded in 1893, for "Mutual Benefit and Assistance," with six members.

We have here, as will be seen from the table, the apparent anomaly of more members of trade societies than there are men in the trade altogether. This is to be accounted for by the fact that the census has made a distinction between shipwrights employed on wood and iron ships, whereas the union makes none. But even with this allowance the trade is very highly organized. In spite, however, of a large membership the societies as a whole are not very powerful, owing to the fact that the industries which they represent are rapidly decreasing in importance.

Of all these trade unions, that of the United River Thames Ship Caulkers (1794) is the oldest. The Shipwrights come next, and one member of this society has in his possession an emblem dated 1796, though, of course, trade union objects are not alluded to thereon. After the repeal of the Combination Laws (1824), this union was reorganized as a trade society, and is especially interesting for the close resemblance it bears to the ancient Guilds, in the way in which its rules enforce apprenticeship, give preference to natives of a town, appoint festival days, forbid law suits between members, and penalize work by candlelight.

But whereas work by candlelight in former days was for-

bidden because artificial light was so poor that it was easy to hide up any defects in work done, without fear of discovery, the reason given in the trades union rule is "so that every opportunity be given to those out of employ."

It seems probable that the old Guild rules were copied much in the same way that a new society now copies the rules of an older one :—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
1481	1193	Shipwrights' Provident Union of the Port of London (1824).	1218	1988	Strike, Death, Accident, and loss of tools Benefits, and a few Pensions. Do not work with non-society men. Apprenticeship enforced.
		Barge Builders' Trade Union (1872).	400		Out of work, Strike, Death and Accident Benefits. Do not work with non-society men. Minimum wage. Apprenticeship enforced.
		Boat Builders' Trade Union.	100		—
		United River Thames Ship Caulkers (1794).	150		Death and Accident money. Relations with masters friendly. Do not work with non-society men.
		Associated Society of Shipwrights.	120		Known as "Wilkie's Union," is a branch of the Newcastle Shipwrights' Society.
372	303	Loyal London United Riggers' Association (1853).	200	280	Death and Accident money. Do not work with non-society men unless they are members of ships' crews, or unless a ship is in danger.
		Mast and Block-makers' Trade Union.	about 80		It is said that every workman in the trade belongs.
407	317	Sail-makers' Trade Society.	133	133	Has two branches: the "Blues" and "Yellows," the first of which will only admit those apprenticed in London.
2260	1813			2401	

The barge builders enforce a rule against piece-work, and the Shipwrights' Provident Society insist that members contracting to do a job shall not sublet any portion of it.

Subscriptions vary from 3*d* per week (United Riggers') to 8*d* (Barge Builders'.) Out of work money is offered by the richer societies, and strike pay. Accident (which takes the place of sick pay), and death money, are the two benefits generally given by each Society.

As a whole the relations of all these societies with the employers are very friendly.

Wages Statistics.

In this section 1813 adult males are employed, and as to these we have wages returns for 140, employed by seven firms, as under :—

Ship builders and repairers	2	=7 firms usually employing 168 persons, of whom 140 are adult males.
Ship furnishers	1	
Barge builders	2	
Sail-maker	1	
Mast and block-maker	1	

The earnings of these men in an average week are as follows :—

Below 20*s*	17,	or 12	per cent.	Under 30*s*, 25 per cent.
20*s* to 25*s*	9	,, 6½	,,	
25*s* ,, 30*s*	9	,, 6½	,,	
30*s* ,, 35*s*	25	,, 18	,,	30*s* and over, 75 per cent.
35*s* ,, 40*s*	16	,, 11½	,,	
40*s* ,, 45*s*	41	,, 29	,,	
45*s* and upwards	23	,, 16½	,,	
	140	,, 100	,,	

The large proportion who are returned as earning below 20*s* is remarkable, and on further analysis it seems that two-thirds of these actually took less than 15*s*, that is, had at most two days' work in the week, and very likely only one.

We have four returns showing busy and slack weeks separately, from which it appears that the numbers remained

constant, but those who earn under 15*s* increase from four to twenty, and the average earnings fall from 35*s* to 31*s* 6*d*.

The earnings of the boys and apprentices range from 5*s* to 18*s* or 19*s*, most of the lads earning 8*s* to 10*s*. They have regular employment, busy and slack weeks showing no difference in numbers or earnings. A few women are employed in sail and tarpaulin making, and earn 9*s* to 14*s* a week.

Social Condition.

Of the 1813 adult males employed, 1520 come under social classification as heads of families. According to the sample tested 18½ per cent. earn less than 25*s* a week, and are to be compared with 24 per cent. who live under crowded conditions. Next, 24½ per cent. earn from 25*s* to 35*s*, and may be compared with 37 per cent. who live in small tenements, but with less than two persons in each room; and finally we have 57 per cent. earning over 35*s*, to be compared with 39 per cent. who belong to the central classes, as follows:—

Comparison of Earnings with Style of Life (Shipwrights).

Earnings as returned.			*Classification of Population.*			
Under 20*s*...	17,	or 12 per cent.	3 or more in each room,	400,	or 5	per cent.
20*s* to 25*s*...	9	,, 6½ ,,	2 to 3 ,,	1450	,, 19	,,
25*s* ,, 30*s*...	9	,, 6½ ,,	1 ,, 2 ,,	2800	,, 37	,,
30*s* ,, 35*s*...	25	,, 18 ,,	Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant	3000	39	,,
35*s* ,, 40*s*...	16	,, 11½ ,,				
40*s* ,, 45*s*...	41	,, 29 ,,				
45*s* & over	23	,, 16½ ,,				
	140	,, 100 ,,		7650	,, 100	,,
			Families of Employers and servants.....	647		
				8297		

The majority of shipwrights, barge builders, caulkers,

riggers, and sail-makers live within a reasonable distance of their work; and as this is to be found either near or on the river itself, so the parishes most favoured are those which abut on either bank, from Rotherhithe to Canning Town. A few live as far away as Forest Gate, for the sake of cheaper rents, and some barge builders will be found as far west as Brentford, but these are exceptions.

It follows that many are able to go home to dinner in the middle of the day. Sail-makers, who all work within a small radius in Limehouse, Poplar, and Wapping, nearly always do so. Caulkers, riggers, and others working on board ships, bring their food with them; but those who can, prefer to have their dinner cooked at home; while those who cannot, go perforce to a neighbouring coffee-house, or to a public-house with tap-room convenience.

In the matter of dress, all the men have a "change" suit of one kind or another. You cannot touch pitch and not be defiled, and as pitch and tar figure largely in the manufacture of ships and barges and their belongings, the men wear "overalls" or keep a separate suit of old clothes for work hours, or put on moleskin trousers and "Dungaree" jackets—each man according to his own particular fancy, with modifications to suit his own convenience; as in the case of the riggers, who have a deep and roomy pocket in the front of their canvas trousers, in which their tools are carried.

In very few cases are there shop clubs, but the men generally belong to their trade society, and, where they can afford it, to a friendly society as well. In this way the poorer will expend 3*d* to 8*d* per week, while the richer will pay in weekly subscriptions as much as 1*s* 6*d* to 2*s*.

It is not usual for the wives, except of those most casually employed, to earn money.

The Fairlop Oak festival, which was originated by the "pump and block-makers" in the middle of the last century, and of which the men connected with the above

industries are still the chief patrons, perhaps deserves some mention. This holiday found its beginning in the invitations issued to his trade friends by one Daniel Day (a pump and block-maker of Wapping) to spend the first Friday of July with him at his little country house close to the famous Fairlop Oak in Essex, there to feast off the good old English fare of beans and bacon. Before the death of Mr. Day (1767), the fame of the feast had spread, and every year the pump and block-makers, to the number of thirty or forty, were driven down in a fully-rigged sailing-boat on wheels, drawn by six horses, and accompanied by a band of musicians, and with them went also many of those connected with allied trades upon the river bank.

The fame of the fair has now degenerated somewhat, but on the first Friday in July, a fully-rigged boat is still drawn in triumph along the Mile End Road. The goal, however, is not so often Fairlop, in Essex, as a public-house in London.

PART III.—METAL WORKERS.

METAL WORKERS.

PRELIMINARY STATEMENT.

Of workers in metals—iron-founders, boiler-makers, blacksmiths, coppersmiths, engineers, &c.—the census counts 65,610 in all, divided as to age and sex in the following manner:—

Persons represented: (A) Census Enumeration.

Enumerated by Age and Sex.							
	10—	15—	20—	25—	55—	65.	Total.
Males	1092	9059	9135	37,677	4657	1824	63,444
Females	91	684	411	502	54	29	1771
Total.....	1183	9743	9546	38,179	4711	1853	65,215

Of these, 39,758 are heads of families, and the whole population included is 187,571, or, excluding the servants, 4·66 to each family on the average.

Persons represented: (B) Enumeration by Families.

No.	Sections.	Heads.	Total numbers (excluding Servants).	Per family (excluding Servants).	Servants.
14	Engine and Machine-makers	15,484	71,519	4·58	882
15	Blacksmiths & White-smiths	8,189	38,698	4·71	130
16	Other workers in iron and steel.....	6,561	30,848	4·69	444
17	Workers in other metals	9,524	44,498	4·66	552
	Total.....	39,758	185,563	4·66	2008
	Servants		2,008		
	Total population		187,571		

The 2008 servants attend 7129 persons, and the remaining 178,434 persons wait upon themselves or each other. Of the 7000 of the servant-keeping class, 4500 have only one servant to four or more of those served, 1800 have one servant with less than four in family, and two servants to four or more persons, whilst all others with two or more servants number 800. There is a striking similarity between these figures and those given for the wood workers in Part II.

Of the 178,000 without servants, 58,000 occupy more than four rooms, or if less than four rooms have more than one to each person; 53,000 more live with one and up to two persons in each room; 43,000 live two and under three in each room; 16,000, three and up to four; and 8000 four or more persons to a room.

SOCIAL CONDITION OF FAMILIES OF METAL WORKERS.

Lower Classes.	4 or more persons to 1 room ...	8,514 or	4·6 %	12·9 %	Crowded: 35·9 %
	3 and under 4 ,, ,, ...	15,603 ,,	8·3 %		
	2 and under 3 ,, ,, ...	43,143 ,,		23·0 %	
	1 and under 2 ,, ,, ...	52,940 ,,		28·2 %	Not Crowded: 64·1 %
Central Classes.	Less than 1 person to a room ...	7,023 ,,	3·8 %	33·5 %	
	More than 4 rooms	51,191 ,,	27·3 %		
	4 or more persons to 1 servant ...	4,526 ,,	2·4 %		
Upper Classes.	Less than 4 persons to 1 servant and 4 or more to 2 servants... ...	1,801 ,,		·9 %	
	All others with 2 or more servants	822 ,,		·4 %	
	Servants	2,008 ,,		1·1 %	
		187,571		100 %	

Social condition (by Sections).

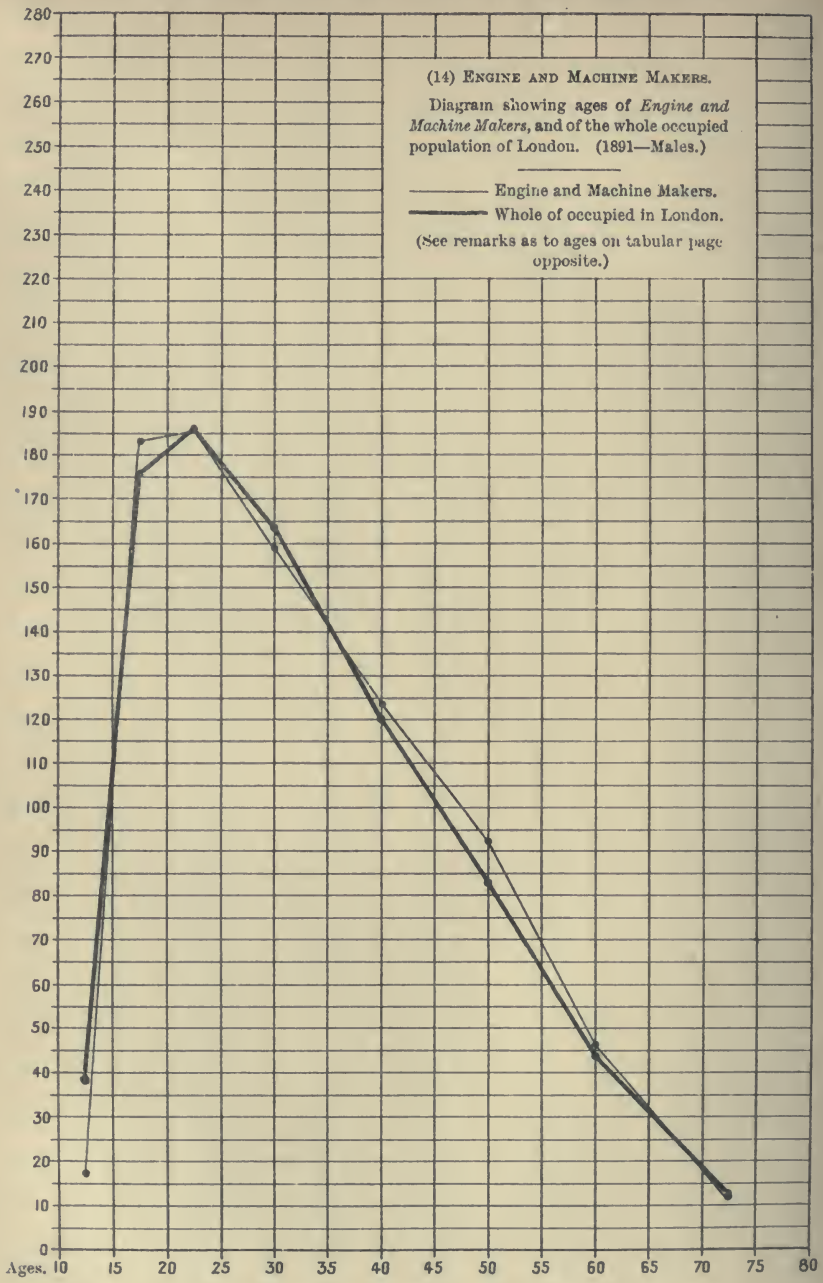
	3, 4, or more persons to a room.	2 and under 3 persons to a room.	1 and under 2 persons to a room.	Less than 1 to a room, more than 4 rooms, or 4 or more persons to a servant.	Less than 4 persons to a servant.	Servants.	Total.
Engine and Machine-makers	5,792	14,141	20,982	29,456	1,148	882	72,401
Per cent.	8	19½	29	41	1½	1	100
Blacksmiths, &c.	6,120	10,023	11,442	10,981	132	130	38,828
Per cent.	16	26	29	28	½	½	100
Other workers in iron and steel	4,550	7,401	8,490	9,807	600	444	31,292
Per cent.	15	24	27	31	2	1	100
Workers in other metals	7,655	11,578	12,026	12,496	743	552	45,050
Per cent.	17	25½	27	28	1½	1	100

CHANGES SINCE 1861 IN NUMBERS EMPLOYED.

	1861.	1871.	1881.	1891.
Engine-makers	12,000	15,400	19,000	25,000
Blacksmiths, &c.....	9,600	9,300	9,900	12,300
Other iron and steel workers	11,300	12,400	10,800	10,700
Workers in other metals ...	12,700	13,100	14,400	17,200
Total.....	45,600	50,200	54,100	65,200

Engine-makers have doubled in numbers since 1861, and the increase in the other sections has been considerable, except as regards "other iron and steel." It may be that some returned under blacksmiths, &c., in 1891, have been misplaced, but iron-founders in London have probably decreased in numbers.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER I.

ENGINEERING, IRON-SHIP BUILDING AND BOILER MAKING. (*Section* 14.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Engine and Machine-maker	135	1656	5563	634	7988
(2) Fitter & Turner	—	1078	7431	761	9270
(3) Weighing Machines, Bicycles, &c.	54	497	1750	273	2574
(4) Boiler-maker	—	487	2088	281	2856
(5) Shipwright, Iron	10	227	1571	498	2306
TOTAL....	199	3945	18403	2447	24994

The proportions at each age-period are those of a normally healthy and permanent trade. The average agrees closely with that of occupied London. (*See* diagram.)

Distribution.

E.	N.	W. & C.	S.	Total.
6048	3190	2767	12,989	24,994

Details of Occupations (from the Census Dictionary).

(1) Fire, gas, hydraulic, locomotive, marine, and stationary engine-maker; paper, printing and other machinery; machinist, planer, slotter, screwer, shaper, borer, driller, finisher; machine-tool maker; ordnance, gun carriage, and torpedo-maker.
(2) Erector, fitter-up.
(3) Millwright, measuring machine, gas-meter, and domestic machinery makers.
(4 and 5) Gas-retort maker; pattern-maker, shipsmith, plater, rivetter, angle-ironsmith, caulker, driller, helper, holder-up, boiler tuber, chipper, finisher.

Enumerated by Families.

Sex	Males		15,449	Heads of Families, 15,484.
	Females		35	
Birthplace	In London	49 %	7531	
	Out of London	51 %	7953	
Industrial Status	Employer	5 %	777	
	Employed	92 %	14,197	
	Neither	3 %	510	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	15,484	13,662	42,373	882	72,401
Average in family..	1	·88	2·74	·06	4·68

Classification.

Numbers living in Families.		%
3 or more to a room	5792	8·0
2 & under 3 ,,	14,141	19·5
1 & under 2 ,,	20,982	28·9
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	29,456	40·9
Less than 4 to 1 servant, and 4 or more to 2 servts.	834	1·1
All others with 2 or more servants ..	314	·4
Servants	882	1·2
	72,401	100

	Inner.	Outer.	Together.
Crowded..	43 %	22 %	27 %
Not ,, ..	57 %	78 %	73 %

Distribution.

East..	Inner	6874	17,922
	Outer	11048	
North	Inner	1155	8605
	Outer	7450	
West	Inner	789	4422
	Outer	3633	
Central	Inner	2428	2428
South-East	Inner	2966	24,273
	Outer	21307	
South-West	Inner	6207	14,751
	Outer	8544	
			72,401

Inner 20,419, or 28 %
Outer 51,982, or 72 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Engine, machine-maker	432	4	1656	5513	125	252	6	7988
(2) Fitter, turner (engine and machine) ..	22	—	17	298	—	14	—	351
(3) Millwright	48	—	1078	8054	—	90	—	9270
(3) Weighing and measuring apparatus	77	2	123	632	6	64	2	906
(3) Bicycle, tricycle-makers	142	—	310	383	5	81	1	922
(3) Spinning, agricultural and domestic machine-makers	36	2	47	181	30	93	6	395
(4) Boiler-maker	24	—	487	2319	—	26	—	2856
(5) Shipwright, ship, barge builder (iron)	66	1	227	1964	9	39	—	2306
TOTAL.....	847	9	3945	19,344	175	659	15	24,994
	856		23,464			674		

Proportion of Employers to Employed—1 to 27

Review of the Trades.

For some years past the tendency throughout the engineering and metal trades has been for London to become more and more exclusively a repairing shop. Each year the quantity of new work turned out becomes smaller, and the reason for this is not far to seek. Circumscribed for space, with heavier rent, rates and taxes, greater cost of labour, and in most cases more to pay for carriage of raw material, the London manufacturer finds himself severely handicapped in competing for work with his provincial rivals of the North and Midlands, and as, despite some slight reaction, it is still the fashion to buy in the cheapest market, the proportion of general contract work which falls to the Londoner is very small. Indeed, it may be asserted roundly that even for work which is to be used in London it is only under some special condition that a *bonâ fide* metropolitan manufacturer can secure the order. Either the work is required in a great hurry, or for some other reason must be made *on the spot,* or else the firm holds a particular patent, or commands, by reason of its long standing and superior work, a practical monopoly in some exceptional class of goods. Thus two large London houses report that they have, in the midst of a general depression, been working at high speed. One of these has a speciality in the manufacture of torpedo boats for British and Foreign Governments; and the other makes a class of printing machines for which there is a great demand at high prices and for which it retains the patents. The work to be done on the spot is of a very varied character, comprising a little of everything and not much of anything. It consists mostly of orders of a limited (often very limited) character—quantities so small that it is not worth while to send elsewhere, or designs which the inventor requires executed under his own supervision. Anything not specially protected, and for which there is any sort of a wide

demand, is almost sure to be made in the provinces or abroad, and this applies equally to large and small work—to engines, machinery, and iron ships, as well as to domestic implements, utensils and cutlery. In the iron-ship building trade the Thames, formerly so noted for its work, now does next to nothing, and elaborate profit-sharing schemes have proved abortive because there have been no profits to share. Indeed, so serious has the state of things become, that special pressure has been put on the Government to suspend the ordinary practice of accepting the lowest satisfactory tender, in order that London may share in the building of new vessels required for the strengthening of the Navy. Up to the present (July, 1894) these efforts have not been attended with much success.

In all the disadvantages above referred to, employer and workman have suffered alike, but there is another direction in which the master's gain has been the mechanic's loss, and this has been in the great development of machinery. A large modern engineering shop is a machinery exhibition in itself—machines which cut and slot, and groove, and bore, and plane, and roll, and hammer—which, with a whirr and a swish, shave and round off the hardest metal to any required shape as easily as though it were so much cheese-rind, and do it almost in the time which it would have taken the old-fashioned mechanic to prepare his tools. True, the making of the machinery is the engineer's work, but our London workman has fared badly at both ends, because, for reasons already explained, he has had little part in the construction of the machinery, whilst, when it is set up in his workshop, he finds his employment considerably curtailed, and a class of semi-skilled men introduced who, though knowing scarcely anything of mechanics, can, with the aid of these machines, which they quickly learn to feed and regulate, turn out work which he, with all his years of training and skill, could scarcely accomplish by hand in tenfold the amount of time.

From all this it might be reasonably assumed that the life of the London fitter and turner* has not of late been altogether an easy one. And in truth he has had a somewhat bad time, but in his case the dark cloud has had a more than usually silvery lining. Thanks to the joint efforts of science and invention, a new world of industry has opened before him, and the words "electric" and "automatic" should be to him amongst the best in our language. Electrical engineering has made enormous strides; automatic machinery, from a gas-meter to a money-box, has become a craze; cycles are a requisite of youth; and no household is complete without its sewing machine.

Acting with commendable promptitude, and backed up by a large trade union, whose officials were shrewd enough to recognize and prepare for the changing conditions, the mechanical engineer adapted himself to, and to a large extent appropriated, the new industries. The London workman probably got and still retains his fair share of the electric and automatic work, and although he has had little to do with the initial stages of the other branches—the number of completely London-made bicycles or sewing machines being quite small—it is nevertheless a fact that these articles, even those of the best make, will get out of order at times, and that the requirements of some eight or nine hundred thousand metropolitan families in respect of these repairs offer no inconsiderable field of work.

Of course such changes as those here sketched, though fairly rapid in their operation, have not been brought about all at once, nor without some friction. In the various stages of transition there has been, as usual, a certain amount of "falling by the way," some hardship, some

* Under the old-fashioned system of industry, fitting and turning were both done by the same person, and it is still the case in smaller shops, but in the larger workshops the two branches are kept quite distinct.

weary struggling against the inevitable, and some failure. A few old firms, famous in their day, have gone under; and others have found it necessary or desirable to transfer their factories to the provinces, and this is still likely to continue. In either case the effect is detrimental to the London mechanic. For it is naturally not without much anxious thought that an employer at length decides to break up his old establishment and seek new ground, therefore when he has made up his mind to this course he intends to avail himself of the full benefits which such a change may bring. Not only must establishment charges be much reduced, but the cost of labour has to come down to the provincial level. And this is just the point at which the "adaptability" of the metropolitan workman finds its positive limit. Willing to learn he may be, willing to "fructify" his ideas in accordance with the teachings of the most modern of sciences, and so to fit himself possibly for avocations at one time undreamt of, but willing to transplant himself to a strange place and submit to a reduction of 8*s* or 10*s* a week in his wages, he is *not*. Here he dons his bullet-proof coat, and the weapon which pierces it must be charged with direst need and privation. And so the *work* goes, and with the exception of a few foremen or leading hands, retained at old rates because practically indispensable, the workmen do *not* follow. The firm advertises for, and has no great difficulty in obtaining provincial hands at 28*s* or 30*s* a week; while their former employees throw themselves anew into the struggle for work at their 38*s* standard. If men of resource or particular skill, they as a rule soon find a regular job somewhere; if not, their future employment, especially if they are getting on in years, is likely to be irregular in its nature.

Allowing for all these drawbacks, however, the London fitter and turner (of whom, as forming the main army of those connected with the metal trades, we must speak in this general statement, leaving exceptions to be dealt with

later, under their separate headings) occupies a very fair position in comparison with the bulk of our workpeople. He is largely a country product, coming to London at twenty-two or thereabouts to see a little life, and bringing with him a certain steadiness and ballast, as well as physical strength, which is said to be deficient in the London-bred workman. Once having obtained a footing, he prepares to settle down, goes back usually to his native place for a wife, and then finds a home in one of the outlying working-class suburbs, where a bit of garden, and a breath of fresh air are obtainable, coming in to his daily task by the workmen's trains.

Thoroughly well organized, with a due sense of the importance of his work to the community, and a consequent pride in his calling, he usually dresses well and looks well, and there is indeed just a suspicion of superiority in the manner in which he regards his fellows in other trades. With a general knowledge of mechanics, which enables him to fit himself, without much difficulty, for the continual development of engineering science, he neither seeks nor requires outside help or commiseration. Given fair opportunity for acquiring scientific knowledge and technical training, and encouraged to make the fullest use of his mental faculties, he may be relied upon to give a good account of himself in the future.

Having said so much by way of general introduction, it will now be most convenient to separately consider each main division of the trades.

General Engineering.

Under this heading are immediately included millwrights, fitters, turners, erectors, planers, borers, slotters, and other machine men, die-sinkers, press-tool makers, stampers, &c., and under sub-headings in the group it will be convenient, following the example of the census, to treat of such

branches as ordnance manufacture, artesian-well engineering, weighing and measuring machine-makers, gas-stove and meter-makers, and bicycle-makers, as well as to give some distinctive account of railway engineering work, which has of course its own peculiar features.

To begin with the method of *training*. A lad is no longer "bound 'prentice." Both employer and workman seem to have joined hands in scouting the old system, and something much less systematic has taken its place, though, with the aid of certain checks and safeguards which the men's organizations have imposed, it seems to work fairly well. Boys are taken on (usually the sons or relatives of men in the workshop), and commence by sweeping up, running errands, or doing other odd jobs, and sometimes are allowed to start in the draughtsmen's office. After a time the lad is set to work at a machine, or vice, or lathe, and it then depends on his own industry and aptitude as to whether he becomes a proficient mechanic or a "waster" (a term applied to an indifferent or lazy workman). His period of nominal apprenticeship is supposed to end when he is twenty-one, but must not have been of less than five years' duration, and after that he is usually expected to serve a further period as "improver." As to the length of this improver period and the rate of remuneration for it, no very definite rule prevails. It varies generally from one to three years, and the wages range from half to three-quarters of the full men's rate, 38*s* a week, the employers using their discretion quite without let or hindrance in this respect. The Amalgamated Society of Engineers allows young fellows, under certain conditions, to join as probationary members at eighteen, and gives them five years from that time in which to obtain full wages, but this limit is not infrequently exceeded. In many cases a young man moves to another shop when or before he is twenty-one, in order to serve his improver period and gain fresh experience, and then takes up his full wage in a third shop.

Wages and Outfit.—The probationary term once fairly done with, and the young mechanic in a position to start as a full-fledged journeyman, his "outfit" is not likely to trouble him much, and may in fact be carried in his pocket; a pair of calippers, square, and rule are all that are necessary, other things being found by the employer, though of course some men have a more elaborate kit. If he obtains work he is usually sure of his 38*s*, the standard being generally recognized. A minority of the employers it is true, resenting all trades union rules as dictatorial, and professing to pay every workman according to his individual merits, do vary the wages, going as low as 36*s* or 34*s* for men of the full age, and giving a little more than 38*s* to their best hands, but it may be fairly surmised that as a rule they are more or less guided by the standard wages, for their rates of pay all round are found to closely approximate to it. Taking skilled mechanics in the engineering trade right through (and thus including such highly skilled work as press-tool making and die sinking), the average wage is probably nearly £2 a week for those regularly employed. A limited amount of *piece* and *task* work is done, though not usually in the best class of shops. As a rule where this system prevails, the men work to a fixed scale of prices, but occasionally they give in a price at which they will do a certain job, and a bargain is struck with the foreman. Part of the work thus given out may take some weeks to complete, and in such cases the method of payment varies. Some firms are content to pay the regular weekly wage of the shops as the work proceeds, the men drawing the surplus at the completion of the work, and any deficiency on one job being set against a surplus on a future one. Others take a rough estimate of the amount of work done each week, and pay on account rather less than the full sum earned, thus always retaining some portion of the price until the job is finished. But in regard to the former method it may be said that it rarely happens that there is

a deficit; generally the man has a "plus" to draw equal to a fifth, fourth, or third of his weekly wages. An examination of the books of several firms shows considerable variation in wages actually paid. In an ordinary week of 54 hours millwrights earned from £2. 5*s* to £1. 18*s*; fitters and turners on time work from £2. 10*s* to £1. 12*s*, the more usual amounts being £2, £1. 18*s*, and £1. 16*s*; on piece-work £2. 16*s* is the highest and £1. 12*s* the lowest, with £2. 2*s* as the medium. Including overtime, wages occasionally reach £4 for millwrights, and £3 for fitters. Machinists range from 5*d* or 6*d* to, in exceptional cases, 8½*d* per hour, the amounts generally earned being between 24*s* and 30*s*. Taking slack times, wages in rare instances ran as low as 17*s* 2*d* (24½ hours) for millwrights, and 11*s* 3*d* (16 hours) for fitters, but more usual figures are 24*s* 6*d*, 28*s*, and 31*s*, representing from two-thirds to four-fifths of full time.

The normal *hours of work* are invariably 54 per week, divided as follows:—Monday to Friday, from 6 A.M. till 5 P.M., with 1½ hours interval for meals; Saturday, 6 till 1, with ½ hour for breakfast.

Overtime is usually paid for at the rate of time and a quarter for the first two hours, and time and a half afterwards, with double pay for Sundays and Christmas Day, and time and a quarter for other public holidays. Owing to badness of trade, there has of late been little extra time worked outside the two or three special firms already alluded to, but formerly, when trade was brisk, overtime was largely resorted to and probably would be again under similar conditions. Both employers and workmen profess to be anxious to do away with the practice, and the trade societies have made well-meaning efforts to limit its application, but not apparently with any great success, for it is a little doubtful whether they have the genuine sympathy of the majority of their members in this direction. There is, in fact, just a suspicion of insincerity all round

on this point. Whatever the men may say in their collective capacity, as individuals the extra money that overtime brings is grateful to many of them, and the greatly enhanced rate of pay acts as an additional inducement, whilst the employer, although he doubtless finds the practice expensive, yet for several reasons deems it not to his interest to do away with it, and this applies with particular force to our London firms. Either the work is required in a great hurry (often this is the reason why it is not sent to the provinces), or it is of a special character, or it is limited in quantity, or the employer is cramped for plant and space—one or all of these reasons may apply, and they are all inducements to keep the regular men on for extra hours rather than take on additional hands. And more particularly is this the case with orders of a special character, dread being expressed lest the new hand should, by some very easily committed blunder, spoil a delicate and valuable piece of work. Possibly these obstacles to the universal abolition of overtime may ultimately be overcome, but they are undoubtedly real difficulties. On the other hand, they apply to a somewhat exceptional condition of things.

Another factor in determining the amount of overtime worked—though not perhaps an important one here—is the quantity of machinery used. Man may insist on time and a half or double time rates being paid, but machinery asserts no such claim, and consequently where much machinery is controlled by few hands, the master finds more temptation to keep his factory going for extra hours than where the more exacting manual labour is in the ascendant.

Seasons.—The trade is not one which is much affected by seasons, and this applies to almost all branches of metal work. It is dependent rather on those cycles of inflation or contraction which affect the industries of the country generally. From such a period of depression the engineering trade right through the country has been

suffering for the past two or three years, aggravated by previous overproduction and by greatly increased capabilities. One firm (not a London house, though doing a large trade here), demonstrated that their output now, though slack, is greater than it was three or four years ago, when very busy, and other reports confirm this—all as a result of the growth of machine power.

Age Capacity.—The trade is a healthy one, with no particular liability to accidents, and men keep at it to a good age. Instances are not rare of men working till seventy or later, though in some cases at reduced wages, the trade society allowing this in specially approved cases of men over fifty-five. It is, however, universally admitted to be a most difficult thing for a stranger to obtain employment if he is, or looks to be, fifty years of age. If a man is known to a firm, other things being satisfactory, age will not be a bar, but if he be unknown, his chance is indeed poor. The lot of the out-of-work mechanic, if past middle life, is not likely to be a happy one; a few firms may give him a job as occasion offers, having employed him in his prime, but to the generality he is simply an old man and a stranger, and thus to be carefully avoided. Whilst even when he does get taken on, he will be amongst the first to go when work falls off.

Irregularity.—The ease with which an engagement may be terminated on either side is worth noting. Neither by law nor custom is any notice required, and a man may legally be discharged at a moment's warning, though, of course, he usually knows when work is failing, and if wise, looks out for something else. Consequently, it is quite the exception for a firm to work short hours; the superfluous hands are dispensed with, and the shop is kept open for its usual time. The advantage of this plan to the fortunate regular man is evident, and it also tends to keep up the standard of wages, which have remained at their present level for a long time.

Given the possibility of regulating the work effectually, and regarding the present condition of trade as exceptional, rather than normal, the position of those engaged in general engineering (excluding, be it remembered, iron-ship building, which is dealt with later on) compares rather favourably with that of those in other branches of industry. There is certainly a fringe (and perhaps a rather heavy fringe) of irregular workers, and moving from shop to shop is not infrequent, but owing to the adaptability on which stress has already been laid, and the wide range of the trade, the mechanic is generally not long before he finds something to which he can turn his hand. If the worst comes to the worst, he has usually his trade society to fall back upon (or a friendly society in case of illness), and with such chance jobs as the mending of a neighbour's mangle, sewing machine, bicycle, or even a refractory clock or musical box, will eke out a living until something better is available.

Up to this point it will be observed that very little indeed has been said about processes of work, and this for the reason that in general engineering they are so many and varied, and the machinery used of so complicated a nature, that nothing short of a large and profusely illustrated technical hand-book could hope to convey an intelligent idea of them to the uninitiated reader. Such description as may be usefully given I have thought may be best treated of in a sketch of a locomotive engineering works, which covers a wide area of the work without being complicated and variable in its details. Before proceeding to this, however, it may be convenient to give some explanation of the terms "press-tool making," and "die sinking," already referred to.

Press-tool making consists in making the special tools which are required for cutting out by machinery various designs in sheet metal. Thus the different parts of the

lock of a rifle, or the delicate mechanism of a sewing or automatic machine, are all cut out in metal from a specially prepared pattern or "tool." This work is sometimes of a very intricate nature, requiring to be gauged to the thousandth part of an inch, and accordingly is more highly paid for, wages rising to 1*s* an hour. Once the tools are made, the articles can be produced by semi-skilled labour, and sometimes women or girls are employed for this purpose.

Die sinking is a closely allied branch. A piece of steel is prepared, and the die-sinker, with suitable tools—gravers, chisels, &c.—cuts out any required design on the face of the steel, to be afterwards reproduced in any quantity on softer metals under the pressure of steam hammers. This work is very tedious and requires great skill. Wages vary according to class of work, but would range from 1*s* to 1*s* 6*d* an hour.

In both these branches the men are all on day-work, and find pretty constant employment.

A Locomotive Engineering Works.

A few of our large railway companies have locomotive works within or upon the confines of the metropolitan area—some used only or chiefly for repairing purposes, whilst others do their new work here as well. Visiting an establishment of the latter kind, the first thing that strikes one on entering the gates is the vastness of the concern, and the amount of ground covered. An array of huge distinct buildings extend on either side, each of them lofty, light, and well-ventilated, and each presenting an animated scene of industry. In giving some particulars of these inter-connected workshops it may be convenient to take them in their natural sequence, bearing in mind that the workmen employed throughout the whole establishment are all labouring to one common end, viz.: the construction of a locomotive engine, and though in so doing we may

encroach on some trades which cannot properly be called engineering, yet under the circumstances this will not be deemed inexcusable.

First, then, let us enter the *Pattern-makers' Shop.* All is clean, quiet, and comfortable here. Each man works at a bench some 10 ft. long by 5 ft., which is fitted with a wooden vice, and on which are ranged his kit of tools, of which he is not a little proud and careful, they being his own property and often of considerable value. His duty is to cut out in wood (usually pine or mahogany) the patterns, drawings of which have been supplied to him from the draughtsman's office, and his work involves a good deal of skill and judgment. He has the assistance of a few labourers and apprentices. The patterns completed, they are next sent to the iron or brass foundries.

The mechanics in the *Iron Foundry* are technically termed moulders, and their work is principally done on their hands and knees in the sandy mould which forms the floor of the workshop. By the aid of this sand or loam the workman makes a mould corresponding to the pattern. This mould is usually in two parts, and each is fitted into a sort of iron box or frame. The box containing the under part is placed on the ground, and the upper half is then very carefully lowered on to it. Every crevice is stopped up with sand, leaving only a small opening through which the molten metal is poured from a large ladle into the hollow within. It is then left to set and cool; subsequently it is handed over to the trimmers, who chip off the rough edges and make the casting look "ship-shape." It is then ready to be passed on for manipulation in the other departments. The scene in an iron foundry towards dusk of a winter's day is a weirdly picturesque one: the men flitting to and fro in front of the large furnaces, whilst lurid gases are emitted from the liquid metal as it pours hissing and seething from the spout of the huge cupola in which it is melted. Besides moulders and trimmers, there are firemen,

labourers, and apprentices employed here. The shop is purely an *iron* foundry, cast steel coming from the North of England.

We must next turn to the *Smiths' Department,* where the wrought iron is being manipulated direct from the drawings, usually without the aid of wooden patterns, but sometimes with the help of models. This again is an interesting and picturesque shop. Down the centre a row of steam hammers, varying in weight, are being worked by boys, whilst on either side is a row of fires, at which the smiths work, with the assistance of one, two, or three men known as "strikers," the number varying according to the nature of the work. Under the direction of the smith, who holds the red-hot metal on the anvil with a pair of tongs, these assistants "strike" with heavy hammers until the required shape has been produced. The smith has the help likewise of unskilled labourers and apprentices. At one end of this shop are the bolt-makers, a small gang of men and boys, whose work is not dissimilar from that of the smith, except that there are no strikers required, the work being done with "olivers," which are in effect mechanical anvils to which hammers of varying size and weight are attached. There are usually three hammers to each oliver, and the bolt-maker works each as required with his foot by means of a treadle. The men work in common and share their earnings.

From the iron-founder and smith, the parts for our engine come either to the turners', machinists', or fitters' shops.

In the *Turning Shop* are a large number of more or less complicated lathes, driven by steam-power, and worked by skilled artisans, single-handed. Here are finished off the parts which require to be accurately rounded, or which have to be screwed. There are also several simple lathes to which boys are put, this usually being the first step in the promotion of the fitters and turners' apprentice, after he has served his probationary period as shop or office boy.

Hard by is the *Machine Shop*, well filled with machinery for shaping, planing, drilling, milling, and slotting. Each machine is in charge of a semi-skilled man, whose work in feeding and tending is fairly simple and straightforward, and whose scale of pay is accordingly but little above that of the ordinary labourer. In fact, the men often are labourers who have been "promoted" to a machine.

As we cross over into the *Fitters' Shop*, the change is marked. Here is no machinery of any kind, unless a grindstone can be reckoned as such, and consequently no noise. As the name "fitters' shop" implies, the work done here is the fitting together of the parts of the machinery as they have come from the other shops, and is performed at the vice. The system also is different. Instead of working single-handed, the men are divided into parties of four, five or six, under charge of a "leading hand," who is responsible for the work done by his gang. Each party includes one or two, and sometimes three apprentices.

So far we have been dealing only with the *iron and steel* portions of the locomotive. Let us now see something of the production of the necessary brass fittings.

The work in the *Brass Foundry* is similar to that performed in the sister shop, the iron foundry. But it is naturally a smaller department, corresponding with the more diminutive character of the work turned out. It is unnecessary to say anything here of the particular process of casting, as this is described later under the heading of "other metals." The men are in charge of a working foreman, who acts as father to a happy family.

The castings pass direct to the *Brass Finishers' Shop*—a nice little place; practically a combination of the fitters' and turners' shop, operations being carried on at lathe, vice, and bench. This is a highly interesting department; one might watch and admire for a long time the ingenious and skilfully-performed processes by which rough castings are gradually changed into beautifully-finished brass

fittings. Very important work it is too, for the cocks, valves, &c., must be capable of resisting a tremendous steam pressure. At the lathes each man works by himself; at the bench the mechanic is generally assisted by an apprentice, or occasionally two mechanics and an apprentice are together.

Closely allied to the above is the *Coppersmiths' Shop*—another small department, with practically no machinery, all being bench and vice-work. Here are made, amongst other things, the pipes which convey the steam to and from the different parts of the engine. When the locomotive is in a sufficiently advanced stage of construction the coppersmith will fit and bend the pipes as circumstances require.

Having now, we will assume, seen all the general fittings completed, we cross the yard to the all-important *Boiler Shop*, and surely never was greater contrast from the departments we have just left. At first all seems chaos and "confusion worse confounded!" Boilers upside down, scattered about in various positions and directions, a deafening noise, and sturdy fellows banging away at plates with no apparent object, save it be to contribute to the din. Some knowledge of the process of boiler construction, however, soon reveals a method in it all, and this process we may now briefly describe. The first thing to be done, after receiving the working drawings, is to obtain the necessary plates. These are sheets of mild steel, varying in thickness from half to nine-sixteenths of an inch, and they have, as is usually the case with London firms, been purchased in the North of England. The larger plates, which are of several kinds—as back-plates, saddle-plates, tube-plates, and valve-seatings—are then passed through the rolling mills, to remove any twists or lumps, whilst smaller plates of a particular description are passed on to the angle ironsmith, who shapes them to the different angles required for binding the other plates together. The plates are next marked off for drilling or cutting, and the holes for the rivets punched out

with a press, following which the planing machine comes into operation, trimming off the edges of the plates clean and smooth, and dispensing with the services of the "chipper," who formerly did this work with hammer and chisel, taking very much longer in the process. Indeed, it is said that these machines save at least two days in the preparation of the plates for one boiler. In order that they may not crack in the process of bending, the plates are next annealed in a furnace, and then, under one heat, are bent to their required shapes by an hydraulic press, these operations being performed by a competent smith, with the assistance of a gang of labourers. The plates are then placed in their proper position by the plater—who has been meanwhile exercising a general supervision of the previous operations—and are then rivetted together, this again being chiefly done in this case by machinery, thereby effecting a great saving of time.* The framework of the boiler thus completed, is turned upside down, in order that the firebox may be placed in position. This firebox, which is also constructed by the boiler-makers, under the charge of the platers, is made of copper, so that it may better resist the flames, and has round it a water-space some three and a half inches wide. When this is finished, the boiler is ready to be tubed. The tubes, of which there are about 220 to a large locomotive boiler, are some thirteen feet long, and are made of steel; they come, as do all the tubes used in London, from the provinces. They are fitted and placed in position by a small body of men called tubers, who occupy a corner of the boiler shop. The necessary fittings—such as the clack box, expansion brackets, whistles, gauge cocks, and other apparatus which it would be too tedious to mention—are then attached to the boiler, which is afterwards tested, and if found capable of withstanding a pressure of 250 lbs. to the square inch without

* In most London firms the rivetting is still done by hand. This will be referred to in the notes on the boiler-making trade further on.

showing any signs of leakage it is pronounced perfect, and transferred to the erecting shop by men termed "heavy lifters"—a gang of labourers selected for their strength and physique to move the heavy work from one department to another as required.

Passing by the *Wheel Shop*, where the turners are busy at their lathes, rounding off the "leading," "trailing," and "driving" wheels of the engines to the standard size as by law required, we come to the *Erecting Shop*, a spacious building where the various parts of the engine are put together by a body of men called erectors, who are in effect first-class fitters, the term erector being almost obsolete outside locomotive works. Railway lines traverse this shop, enclosing a hollow space or "pit," over which, on a stout framework, the body of the engine is built up, so that it can afterwards be lifted with steam-cranes, and the wheels affixed. The men work in gangs of from five to ten in number (including one or two apprentices usually), and are under the direction of a "chargeman." By them the construction of the engine is completed, and the painter having done his work of "beautifying," it issues forth a finished "monarch of the road."

In this general review we have so far omitted the *Millwrights' Shop*,* because the men—who although called millwrights are in reality first-class fitters and turners—are not directly concerned in engine building. Their principal duty is to keep in repair the machinery and stationary engines in use throughout the works, but they also make the gauges to which the different parts of the engine are constructed, serving them out to the workmen as required, and taking them back when the work is finished. They are all on day-work, and have the assistance of a number of apprentices.

The conditions of work in a railway shop are sufficiently

* In a private engineering firm this would be known as the tool department.

distinct from those prevailing in a private firm to merit some remark. The number of hours worked is the same (viz. fifty-four per week), but they are divided somewhat differently. On the first five days of the week the men start at 6 A.M. and finish at 5.30 P.M., having three-quarters of an hour (8.15 till 9) for breakfast and an hour (1 till 2) for dinner. On Saturday work goes on from 6 till 12, with three-quarters of an hour's interval for breakfast. Wages on the average are a trifle lower, but, on the other hand, work is much more regular. Men who have once obtained a footing are seldom discharged, except it be for some fault. In the rare periods of slackness the men are put on short time, which is entirely opposite to the practice prevailing elsewhere. Overtime is but seldom resorted to—just a little pressure in the excursion season perhaps—and there are certain fixed holidays at Christmas, Easter, Whitsun, &c., amounting in all to about three weeks in the year. Like private firms, the companies make no allowance for holidays, or for time lost from whatever cause. They are, however, not unmindful of the interests of their employees either in or out of the workshop. In at least one case a dining hall is attached to the works, at which meals can be obtained at a very moderate price; and there is a large recreative institute, with science and art classes attached, which is undoubtedly beneficial to those who avail themselves of it. The advantage of cheap railway fares—$\frac{1}{4}d$ per mile—is also granted to the men, and reciprocity amongst the different companies on this head is being attempted.

The apprenticeship system is more fully recognized than elsewhere. Starting at 5*s* a week, and rising 2*s* a week each year, the boy serves his regular seven years, and then usually two or three years as "improver." If intended for a mechanical engineer, he begins in the turning shop, where he stays about two years, and then remains for a stated period in the machine, fitting, and erecting shops respectively; but should he wish to become an iron-moulder, smith or

boiler-maker, &c., he is kept to the one shop in which the particular trade is carried on. Usually the boys taken on are the sons and relatives of men in the company's employ.

In the mind of an ordinary trade unionist a railway works is not regarded as an ideal shop. For although, as in the case of private firms, wages are undoubtedly largely regulated by the trade standard, the companies reserve considerable discretion in the matter. There is also, as intimated in a previous chapter, complaint as to the large proportion of boys employed; whilst the readiness with which advantage is taken of any machinery which will dispense with labour can hardly be accepted with complacency by the men. But these corporate concerns are too large, and their resources too vast, to permit of their being lightly interfered with, even were the trade unions disposed to interfere, whilst they afford to those employed in them the undoubted advantages which a steady and constant supply of work always brings.

Ordnance Manufacture.—Machine guns, ordnance, gun carriages, &c., are manufactured mainly by means of machinery, and the work, which is greatly sub-divided, is in London, practically confined to Woolwich Arsenal, where about 11,000 persons in all are employed. Of these some 2000 men are fully-trained mechanics, such as fitters, turners, smiths, rivetters, moulders, pattern makers and leading hands, whose rates of wages range from 35*s* to 45*s*, with an average of 37*s* 6*d*; 3200 are "skilled labourers" (machine hands) at wages ranging from as high as 35*s* to as low as 18*s*, with an average of 23*s*; 1500 are unskilled labourers, at about 21*s* a week; 3200 are improvers, trade lads and boys; and about 1000 are engine or crane-drivers, stokers, firemen, carpenters, painters, and others who, as well as the unskilled labourers, would probably be returned by the census in other sections of employment. For the great bulk of the men work is constant, and a fair proportion of the mechanics are members of trades unions. The eight-hour day has recently been

introduced into the Arsenal, but there is some complaint of its evasion, though with what truth we know not. An agitation is also being carried on to obtain increased wages, particularly for the workmen in the lower ranks.

Artesian-well Engineering.—The amount of well-boring done in London is not large. Occasionally a brewery or factory requires a well sunk, but more generally the work is for some country establishment, or is connected with the construction of new waterworks for some growing provincial town. But as a few metropolitan firms make a specialty of this business, some account of it is desirable. The old-fashioned well-borer, who took little jobs on his own account and filled up time by working for an employer, has been for the most part superseded, and he and his order are becoming extinct. His leisurely, unmethodical, and not always reliable ways did not commend themselves to go-a-head modern firms, who, gradually dispensing with his services, trained their own regular men to do the work instead.

I am indebted to one firm, which I understood is typical of others, for a description of the method now adopted. A contract having been obtained for a well to be sunk, probably in some country place, an experienced foreman and assistant are ordered down to take charge of the work, and at the same time the necessary plant and machinery, which has all been prepared in the London workshop, is sent on. Labour is usually engaged on the spot, but sometimes labourers are also sent from London. Three or four men are required for each job, according to the depth of the boring.

For shallow boring manual labour only is used, but steam-power is required for deep wells. On the foreman devolves considerable responsibility, and he must be a man of skill and resource, in order to deal with the difficulties of boring or mishaps to machinery which may occur. One of his duties is to send up daily a full report of the progress of the work. The hours of work are the usual fifty-four per week, and the wages of foremen range from about 42*s* to 35*s* a week, with 10*s* 6*d* lodging-money; assistant foremen get

from 33*s* to 30*s*, with 3*s* lodging-money. Labourers, if sent from London, are paid 4*s* a day with 3*s* a week for lodgings; if hired on the spot, they receive rather more than the current wages of the district.

The method of training adopted by the firm under notice is unique. They have no apprentices or boys of any kind, and men are taken on quite irrespective of their previous knowledge. The necessary qualifications are reliability and aptitude. Provided a man possesses these, the firm will train him for their work, and indeed they make no secret of the fact that some of their best men were not acquainted with the rudiments of the trade when they engaged them. Trustworthiness is of the utmost importance, as the men are often away from headquarters for weeks and months together.

Work is quite constant for the mechanics, as the employers, when once they have proved a man's calibre and trained him to their work, cannot afford to lose him. If contracts fall short, something is found for the man to do in the workshop. The trade is a healthy one, and men keep at it till a good age. There is of course a certain liability to accident, and in some cases a firm makes provision against this by insuring its men at its own expense.

Weighing-machine Makers.—This is another small and fairly prosperous industry in the metropolis, and exhibits the common characteristics of the engineering trades—great variety on a limited scale. Every kind of apparatus for weighing purposes is made here, save perhaps weigh-bridges and spring-balances, which are a product of Birmingham and West Bromwich. The iron castings needed are purchased by the London makers, who do all the rest of the work, including the forgings, the scales manufactured being of the best character and commanding the highest prices. There is no wholesale trade here. A few years back there seemed a prospect of London ceasing to be a centre of manufacture for weighing machines, but following a combination of the men and an agreement between them

and the masters, some revival has taken place. Orders which formerly were sent to Birmingham are now executed here, the apprenticeship system has been partially resuscitated, and a practice which was growing up of employing labourers and semi-skilled men has been checked. The men are now fairly well organized, their union (The London Society of Scale Makers) claiming to include nearly eighty out of about a hundred competent mechanics in the trade here. The system of work is both time and piece, probably rather more of the latter than the former. Time wages run at about 36*s* a week for those employed in factories and workshops, and 34*s* for those outside. The outside work consists in the cleaning and adjusting of scales at tradesmen's shops, and consequently is not considered such skilled work as the other. Piece workers, who reckon to earn about 20 per cent. more than time workers, but of course are not quite so fully occupied, are in the habit of giving in a price for each job, the work varying too greatly in character to allow of definitely specified rates. The standard hours are fifty-four per week, and overtime is scarcely ever worked, so it has never been necessary to fix an overtime rate. The work is very constant, there being never more than 2 or 3 per cent. unemployed. This is largely due to the fact that tradespeople commonly have an agreement with a scale-maker to keep their scales in order, and the latter accordingly has them tested at regular intervals. More than half the work is of this character. The trade is not affected by seasons, and the only time of extra pressure is when some new law or Government regulation is passed, such, for instance, as the introduction of the Parcel Post, which made business very brisk for a time. Relations with employers are quite amicable. There is an agreement between representatives of masters and men to appoint an arbitration board to deal with cases of dispute, but it has never been necessary to put this provision into operation.

Weights are made by iron or brass workers. Scale-makers only do the adjusting.

Gas-meter Making is generally considered to be allied to the tin-plate workers' trade, but as the census combines the men so employed with the weighing-machine makers, it is necessary to refer to them at this point. It is a small skilled trade, with probably not more than 350 mechanics all told, and nearly all of them members of the Tin-plate Workers and Gas-meter Makers' Society. The work is confined to eight or ten firms (two of which employ about eighty hands each, and another sixty), and is of course mainly executed for gas companies, several provincial companies having their meters made here. The meters are of two kinds—wet and dry, but the wet meters, although said to be the more accurate, are but little used now, owing probably to the trouble of renewing the water in them from time to time.

The system of work is entirely piece, there being a fixed scale of prices both for making and repairing every part of the meter. In some small shops a man will make a meter right through (except the index), but in large shops the work is usually separated into three divisions. The making of large meters pays best. These are all made by hand, and are sometimes highly skilled and finished specimens of work. For the smaller meters the parts are stamped out of sheet metal by means of dies. Earnings range from about 35*s* to 50*s* a week, and although little overtime is worked, a full week can generally be made, the ordinary trade being nicely regulated, and there being of late, in addition, a pressure of orders caused by the introduction of the popular "penny in the slot meters."

The indexes and the automatic apparatus are made by brass workers.

Gas Stoves.—This is a comparatively modern and not a large trade, employing a certain number of competent fitters to do the more important part of the work, whilst the bulk of it is done by semi-skilled men with the aid of machinery. Stoves are of two kinds—for heating and for

cooking purposes, the former being demanded in winter and the latter in summer. Consequently firms which manufacture both descriptions have two seasons, with a slack period of about a month's duration between, when the men work short time.

Sub-division of labour and piece-work are the features of this business; everything which can be apportioned off has its fixed price; and even the boy put on to a machine for the first time is set to drilling holes at so much per score or per hundred as the case may be, and soon earns his 6*s* or 8*s* a week. The fitters undertake to put so many stoves together for a specified sum, which varies according to the size of the stove. The larger stoves pay best, and it is usual to give these to the older and more experienced hands, leaving the smaller ones to the younger men and lads, of whom there are a large proportion employed. Labourers are generally provided to carry the work to and from the different departments, and these are paid a weekly wage by the firm, as are also the testers, a small special class of men at high wages who examine the stoves to see that they are properly made and give the finishing touches. Hours rule as in other firms, and the wages of skilled mechanics range from 35*s* to 28*s* on the average; young men, "improvers," earn 17*s* or 18*s*, labourers 21*s*, and boys 6*s* to 10*s*. One or two firms, which make patent stoves for heating purposes only, do little trade in the summer, and the men discharged by them are said to find employment in building operations, such as painting and whitewashing, coming back to the stove work in winter.

Certain parts of this trade do not seem at all desirable ones to work at. The burnishing and polishing, which are done by machinery, cause a cloud of fine metal dust to fly about, which cannot, one would think, be other than deleterious, as are also, in spite of precautions more or less strictly observed, the enamelling processes. Altogether, this business can hardly be classed amongst the best of

the metal trades, whether healthiness or system of work be considered.

Bicycle Making.—As everyone knows, the centre of the cycle industry is in the Midlands, and those who follow the trade in London mainly confine themselves to retailing and repairing. Apart from the showrooms of the large country manufacturers, the trade is mostly in the hands of men who have been fitters. Saving a little money, they open a shop, obtain a few machines "on sale" from some provincial firm, stock their window with wheels, tyres, lamps, whistles and other accessories, and commence business. As a rule the work of these men is limited to doing general repairs and dealing in new or secondhand machines, but occasionally there comes a windfall in the shape of an order to make a bicycle of some given pattern. There are stores in London which sell the parts of a bicycle in all sizes, shapes and conditions, and all of provincial make. To one of these the small "maker" betakes himself, buys the parts he requires, either in the rough or finished as suits him, builds up and finishes his machine either for order or stock as the case may be, and turns out a "genuine London-made bicycle." Of the earnings of these men I have no record, but as they are skilled fitters of a thrifty class, they probably do very fairly. When busy they may employ two or three hands, semi-skilled men, at 6*d* or so per hour. A poor and precarious living these latter make, with just once in a way a lucky turn, when on some special order for a machine they are put on piece-work, and may earn 1*s* to 1*s* 6*d* per hour.

Boiler Making and Iron-ship Building.

Besides the several trades already described, Section 14 of our industrial enumeration includes those engaged in the above trades, and returns rather more than five thousand men as so occupied in London. It must not be supposed, however, that these cover the whole ground, for the ubiquitous fitter, in the guise of the marine engineer, figures here as elsewhere, and several firms combine

general engineering and ship-work with boiler making. The trades are, however, sufficiently distinct to permit of separate treatment.

Of *Ship Building* proper it is hardly necessary to say much. To speak of it is to describe the past rather than the present—to bring before the wistful eyes of the Londoner a picture of the time when the banks of Father Thames, below London Bridge, formed the great ship-building yard of the world, and to recall to his mind a gallant but painful struggle against fate. Now it is nearly all gone, and so far as we can see through no fault of our own. To the last the work retains its reputation as being of the very best—to the last a London-built ship can weather a gale with the stoutest.* Possibly there may have been some difficulty in launching large vessels, but it is, here as elsewhere, mainly the race for cheapness that has caused our downfall—our provincial rivals have had every facility for producing work at less cost than ourselves—they have availed themselves most fully of their advantage—and so we have been beaten out of the market. What may be the outcome of efforts now being made to revive the industry we cannot say, but meanwhile our artisans fall back upon *ship repairing*, and here, fortunately, there is still a wide though precarious field of work. For the exigencies of modern trade make it practically essential that a ship should be repaired (unless the repairs are on a very large scale) at the port at which it discharges its cargo.

It is indeed a repetition of the old story as to why work is executed in London. Time is the all-potent factor. Every hour that a ship remains idle means, under ordinary circumstances, considerable monetary loss to the owners. so the repairing must be performed at the highest possible speed. No sooner is the vessel clear than she is boarded by as many workmen as can well be employed on her, and

* A reason suggested for the superiority of London-built ships, at any rate, for Government purposes, is that, being on the spot, the officials gave more continuous supervision than is possible in the case of work performed elsewhere.

the work is continued, night and day, without intermission, until completed. Under such conditions both employers and men in combination are able to ask and receive prices for their work which could not in any other circumstances be thought of. Not only does a man get double pay (about 1*s* 6*d* per hour) for night-work, commencing from 5 P.M., and quite irrespective of whether he has done any day-work previously, but he is also paid for meal times, and has certain allowances under the name of "dirty money," amounting, in the case of work on oil-boats, to 3*s* a day. Some restriction has been put upon the length of time which a man may work continuously, but even under strict trade union rules he may always keep on for twenty-four hours, and in certain events for about thirty hours at a stretch. As in dock work, to which it is closely akin, this system of uncertainty and rush has had a demoralizing effect. The men are liable to be called on at all times—even though it be a Saturday night—and so the intervals of waiting are often spent in loafing at street corners on the chance of being wanted. The consequence has been the growth of a class of casual mechanics, corresponding to the casual labourer of the docks, some of whom prefer the long hours and intermittent spells of work at high wages to the regular and more moderately remunerated employment of the workshop. It must, however, in justice be said that these form but a small minority of the whole trade, and that even amongst those who do ship-repairing, there are many who would prefer a constant job if they could obtain it.

Some employers incline to the belief that these irregularly employed men, changing about from firm to firm, earn on the average as much as the constantly employed mechanic, but I cannot make out that this is so. They probably get rather more work in winter than summer, accidents to ships being more frequent owing to stress of weather.

Boiler Making.—To the men who are mainly employed in ship-work are linked, both by name and organization,

those more regularly occupied in boiler-shops and yards in the manufacture and repair of boilers of various kinds (but principally for marine purposes), as well as those on bridge, girder, gasometer, and other constructional iron-work. They are all known in general terms as boiler-makers, but are technically divided into angle-ironsmiths, platers, rivetters, caulkers, holders-up, and helpers. A general account of the process of boiler making has already been given, but it may here be added that angle-iron workers sometimes have helpers to assist them, and platers invariably —one assistant for light work and two for heavy. Rivetters work in gangs, consisting of two rivetters, one holder-up (who presses a heavy hammer against the rivets whilst the others strike them), and one or two boys to carry the rivet-fire and blow the bellows. If on piece-work the helpers and holders-up take their proportion of the piece-price arranged, in accordance with their respective wages when on time. The caulker generally works alone, following up the rivetters, closing up and smoothing off the rivets, chipping away the rough edges and finishing the work. Working the customary fifty-four hours a week, the recognized standard of wages is, on new work: platers and angle-ironsmiths, 45*s*, or 7*s* 6*d* per day; rivetters and caulkers, 6*s* 6*d* per day; holders-up, 5*s* 6*d* per day. On repair work the rate all round is 6*d* per day higher.

But there is the usual diversity in amounts actually earned, varying to some extent with the firm, but mainly depending on the number of hours put in and the quickness of the individual worker, a good deal of the new work (but not repairs) being done by the piece. An examination of the returns of a number of firms shows that in a busy week on time-work, a plater earned £4. 11*s* for 91 hours, another £4. 7*s* for 87 hours, a third £3. 15*s* for 92 hours, and a fourth £3. 10*s* for 90 hours; a rivetter earned £4. 2*s*, putting in 102 hours, another £3. 12*s* for 88 hours, and a third £3. 10*s* for 85 hours; caulkers made £4. 4*s* (95 hours), £3. 8*s* 5*d* (88 hours), and £2. 11*s* 9*d* (66

hours), &c., whilst holders-up figure for £3. 9*s* 4*d* (99 hours), and £2. 8*s* 6*d* (93 hours) as top amounts.* Angle-iron-smiths are much fewer in number than the others, but even so, the quantity of work to be performed by them seems to be proportionately less. Their work is the most skilled, and generally commands the highest rate of pay, but the hours worked are apparently not so long, and the sums earned therefore not so large, as in other branches. Thus £2. 14*s* is the highest amount we have recorded for time-work. Helpers are paid about 6*d* per hour, and the returns show an ordinary range of 27*s* to 30*s*, but in an exceptional week one man made 90 hours and took £2. 5*s*. On piece-work we find platers earning £3. 7*s*, £3, £2. 12*s*; a double rivet gang (six men and two boys) draw £14. 16*s* 8*d*, a single gang (three men and one boy) £4. 14*s* 2*d*, and a third gang (three men and two boys) £5. 7*s* 6*d*; two caulkers working together earn £6. 1*s*, and holders-up from 30*s* to 26*s*, but in none of these cases probably was more than the ordinary number of hours worked, sometimes less. Where a gang of men work together the job is taken by one man, who shares with the rest. In slack times the piece worker's earnings may fall very low, or he may be discharged; time workers, if kept on, will usually receive about the normal wage; in some cases short time is worked, but more generally the number of men is reduced.

Irregularity, as already intimated, is the necessary feature of the ship-repairing business, but, although not nearly so marked, it also prevails to an undesirable extent in the other branches of the trade. Returns of several large firms show that about one-third of their workmen are not fully employed by them, and it may be safely reckoned that the bulk of these do not get more than half the year's work with one firm. It does not, however, by any means follow that this is all they get. The trade not being a season one, and

* It should be explained that the hours stated are more than the number actually worked, because overtime is counted as time and a half, &c. Thus the man recorded as making 102 hours may only have been at work 80 or less.

depending mainly on contracts, one firm will be busy while another is slack; consequently there is a good deal of changing from one employer to another, and a man may be employed by several firms in the course of a year. This makes it most difficult to ascertain the true measure of the unemployed, but it may be roughly estimated at 5 to 10 per cent. The men very rarely do work outside their trade, and even within it they are greatly restricted. The United Society of Boiler Makers and Iron-ship Builders, a powerful organization, claiming to have more than 90 per cent. of the mechanics in the London trade in its ranks, is very stringent in confining a man to one branch of the trade, thereby differing entirely in policy from the Engineers' Societies. "Once a rivetter always a rivetter," or "once a plater always a plater," seems to be in effect its motto. It is true that a man may "progress," as it is termed, from one section of the trade to another, provided he obtains the sanction of the branch of the Society to which he belongs, but then, apart from the natural indisposition of men to voluntarily allow fresh rivals to come in to compete for their particular kind of work, such permission can only be given if there is no unemployed member in the section to which he wishes to change. So that the chance of obtaining such sanction, save in the busiest time, is very slight, and woe betide the member who encroaches on another branch without it. On the other hand, there is a compensating advantage: the recognized order of "progression" is upwards (holder-up, caulker, rivetter, plater, angle-ironsmith); holders-up very rarely progress as a matter of fact; the real point of change is from rivetter to plater, and here it happens that in slack times a rivetter may often prefer not to "progress," because there being much more rivetting than plating to do, he stands a better chance of work.

Training.—The remarks made on this subject under general engineering largely apply to this trade also. There is little regular apprenticeship, and, for the most part, the extent of a lad's knowledge of the work is a matter of

chance, depending partly on the boy's aptitude, but more perhaps on the influence which his father or some other friend in the shop is able to exercise on his behalf. Of two lads commencing work together, one may rise to the top whilst the other never gets to be anything more than a holder-up—maybe never has the chance to do anything better. Here, as elsewhere, there are better opportunities of learning the trade in a small shop than in a large one. In a big establishment a lad will be kept to one branch, whereas in a small one he may be put to two or three different sections of the work. Usually a boy is taken on at fifteen or sixteen, and starts by heating and carrying the rivets and tending the fires, getting 8*s* or 10*s* at first, and rising by yearly increments of 2*s* a week. At eighteen he may be promoted to a holder-up's place, and then, if among the fortunate, pass through the successive stages of caulker, rivetter, and plater. There is the customary "improver" period, followed by full wages at twenty-two to twenty-five years of age, as the case may be. In repair-work the recognized number is two lads to seven journeymen, but in new work rather more are allowed.

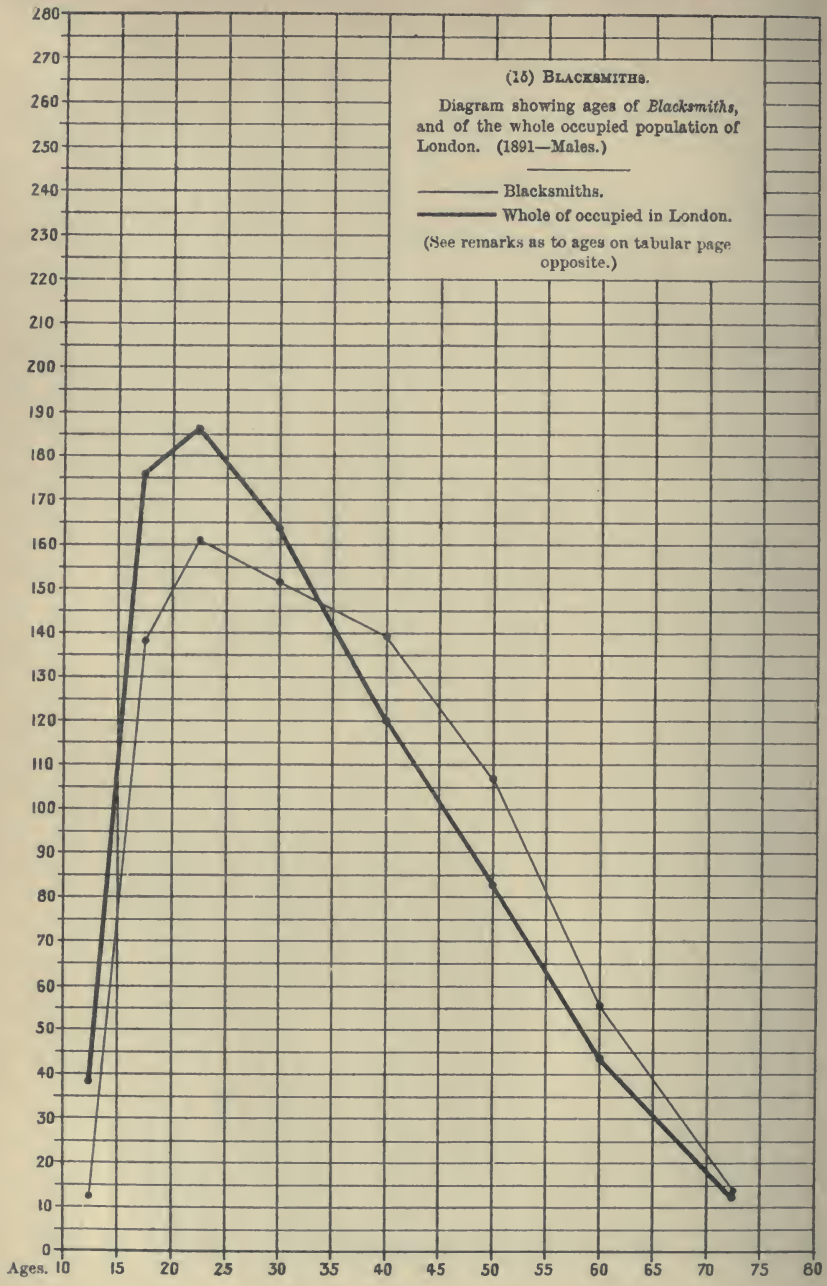
Drillers and Chippers.—The boiler-making trade has been characterized by a good deal of quarrelling, not so much between masters and men (though there has been a certain amount of that) as between different groups of the men themselves. Originally the boiler-makers' trade society only admitted as members the angle-ironsmith, plater, and rivetter, who regarded themselves as *the* skilled men, and the rest as rather an inferior class of workmen, "to be kept in their proper places." But, ultimately, finding this position unsatisfactory, they opened their ranks, first to the caulkers, and afterwards, on a separate and lower scale, to the holders-up. Having done this, they waged war on the men calling themselves drillers and chippers, claiming that drilling was the rivetters' work and chipping the inherent right of their friends the caulkers,

although, at any rate in the former case, the claim had not been much exercised for some years. The drillers and chippers formed themselves into a society, and carried on the struggle for a long time, but gradually lost ground under pressure of the much stronger body, until, "judging the way of the wind," the drillers seceded, formed an organization of their own, and came to an amicable understanding with the boiler-makers. By the terms of this arrangement, certain parts of the drilling work are reserved to the boiler-makers, should they wish to do it, but it is understood that in actual practice they do not often claim it. The new organization, known as the United Society of Drillers, has, as far as feasible, adopted the rules and customs of the Boiler-makers' Union, and, in reality, works under its protection. The effect of this on the ostracised chippers may be imagined. Most of the shops are closed against them, and, as the sphere of their operations is now very limited, some are leaving the trade altogether, whilst others, it is said, are becoming drillers. At best, the work of the chipper was but rough and semi-skilled, and though he claimed a wage of 5*s* or 5*s* 6*d* a day, he apparently often had to work for less. Had the quarrel not been settled as it has been, machinery would most likely have been introduced to do the work. Drillers claim a wage of 5*s* per day on new work and 5*s* 6*d* on repair, but a good deal of their work is by the piece, a scale of prices having been arranged on the basis of allowing a man to earn up to time and a half of day wages. Work fluctuates as with boiler-makers, and other conditions are very similar in character.

Trade Organization, &c.

Information as to trade organization and statistics of wages are given at the end of Chapter III., pp. 353-65. The manner in which the Engineering and Iron Trades are inter-connected has rendered it necessary to combine these particulars into one statement.

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



CHAPTER II.

BLACKSMITHS. (*Section* 15.)

Persons Represented.

Census Enumeration.

Census Division, 1891.	Females.	Males.			Total.
	All Ages.	—19	20—54	55—	
Blacksmith and Whitesmith	41	1467	9266	1493	12267

Except for the absence of boys this industry is not far from normal as to the ages of those employed. After 45 there is a decided decrease, but it is not until 55 is reached that the great falling off in numbers takes place. (*See* diagram.)

Distribution.

E.	N.	W. & C.	S.	Total.
2187	2345	2472	5263	12,267

Details of Occupations (from the Census Dictionary).

Oliverman, hammer-man, anvil striker, welder, farrier, shoeing smith, fireman, doorman, horse-shoe maker, iron-hurdle maker.

Enumerated by Families.

Sex	Males		8164	Heads of Families. 8189.
	Females		25	
Birthplace	In London	47 %	3838	
	Out of London	53 %	4351	
Industrial Status	Employer	7 %	586	
	Employed	88 %	7185	
	Neither	5 %	418	

Total Population concerned.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	8189	7689	22,820	130	38,828
Average in family	1	·94	2·79	·02	4·75

Classification.

Numbers living in Families.		%
3 or more to a room	6120	15·8
2 & under 3 ,,	10,023	25·8
1 & under 2 ,,	11,442	29·5
Less than 1 ,, / More than 4 rooms / 4 or more to 1 servant	10,981	28·3
Less than 4 to 1 servant and 4 or more to 2 servts.	119	·3
All others with 2 or more servants	13	—
Servants	130	·3
	38,828	100

	Inner.	Outer.	Together.
Crowded	54 %	35 %	42 %
Not ,,	46 %	65 %	58 %

Distribution.

East	Inner 3739, Outer 2894	6633
North	Inner 2158, Outer 5126	7284
West	Inner 938, Outer 4875	5813
Central	Inner 1883	1883
South-East	Inner 1383, Outer 7616	8999
South-West	Inner 3649, Outer 4567	8216
		38,828

Inner 13,750, or 35 %
Outer 25,078, or 65 %

Status as to Employment (according to Census Enumeration).

Census Division (1891).	Employers.		Employed.			Neither Employer nor Employed.		Total.
			Males.		Females of all ages.			
	Males.	Females	Under 20.	Over 20.		Males.	Females	
Blacksmith, Whitesmith	614	19	1467	9592	22	553	—	12,267
Total	633		11,081			553		

Proportion of Employers to Employed-1 to 17

Introductory.

The blacksmith's calling has ever possessed for the public a certain romantic interest. There is something about the roar of the bellows, the bright glow of the fires, and the clear ring of the anvil, which seems peculiarly to associate itself in the mind with sturdy honest manhood, and to constitute the smith's avocation the *beau ideal* of honourable toil. Not all the prosy matter-of-fact developments of modern industry have served to efface this feeling, and grown men and women, as well as children, delight to look in at the "open door" and watch the movements of the farrier as he deftly plies his trade. And there are as many as ever of these "open doors" in our midst. It is true that time has brought some changes. The rough and ready horse-doctor of old has been transformed into the accomplished veterinary surgeon of to-day, general smith's work has become divorced from that of the farrier, task work has taken the place of the more leisurely time labour, and the trade is no longer entirely in the hands of little masters, though they still retain the bulk of it. Large employers of labour have sprung up, but even these adhere to the ancient system, and keep a number of small shops in different localities, in preference to a large central establishment.

The group which we have now to consider should properly be divided into two sections: (*a*) Farriers, who are engaged in the making and fitting on of horses' shoes; (*b*) Smiths (including builders' fitters and white-smiths), who forge and manipulate wrought iron-work generally.

Farriers.

Of these there are in all about 4000 in London, and they divide again into two grades, termed firemen and doormen. The former makes and fits the shoes, and the latter assists in

making them and puts them on. The men generally work in sets of three, consisting of two doormen and one fireman, and constituting what is termed a "double-handed fire." In private firms the work is, as a rule, done by the piece or task, arranged on a standard of 6*s* per day for firemen and 5*s* for doormen, in non-union forges; and 6*s* 4*d* and 5*s* 6*d* in forges which pay the trade union rate; a day's work for the three men is to put on forty-eight shoes, or to make sixty light shoes, such as are worn by carriage horses, or forty-eight heavy ones, such as are required by cart horses. The time taken to do the work of shoeing varies according to the temper of the horse, nature of the hoof, &c., and in this the West End farriers have the advantage, as their work consists principally in shoeing young carriage horses, whose feet are in good condition; as these grow old they are sold and go into the 'bus, cab and various other trades, and so come to the farriers in other parts of London to be shod. In making the shoes, the quality of the coal and material used are factors in determining the amount of work done in a given time. Usually for shoeing or making shoes, the "task" represents nine to nine and a half hours' work, and is so paid, but under the most favourable conditions may be accomplished in from six to seven hours. The hours actually kept in piece workshops are an uncertain quantity. Commencing about 6 A.M., the men go on till the smithy is clear of horses, be it until 6 or 7 o'clock at night, and even 9 or 10. Intervals in the day may be filled up by making shoes. In the West End, where the horses are brought in at more seasonable hours, it is usual to do shoeing in the morning, and to make shoes in the afternoon for next day, but even here a good deal of extra time is worked. In connection with the hours of labour, it is a remarkable fact that in almost every forge no regular stated meal times are laid down. The men often work five or six and even seven hours without food.

Where the day-work system is in operation, as is the case with the 'bus and tram companies, the hours worked vary

according to the employer, from fifty-four to sixty-one per week, and wages of doormen from 35*s* to 34*s*, with an average of 31*s*; and of firemen from 33*s* to 42*s*, average 37*s*. There is not much overtime under the day system, but a certain amount of Sunday work is quite usual. The men have to go round and examine the horses' feet, see how the shoes are, put in nails, &c. The large tram and 'bus companies pay 1*s* or 2*s* extra for this, but the practice of Sunday work is not confined to them, some of the master farriers sending round on this day to their customers' stables.

To mention season work in connection with the shoeing of horses may seem strange, but it is nevertheless a fact that the trade varies somewhat according to the time of the year. Thus, in the West End, work is slack during August and September, owing to the number of carriage horses which are taken away by their owners or are resting, whilst, on the other hand, frosty weather may cause a busy time in "roughing" horses. Frost cogs are, however, coming into use now. In slack time men are discharged. The unemployed rarely turn to any other trade; firemen might take smiths' work, but hardly ever do.

Shifting from one employer to another is frequent, partly, as one man put it, because there are so many people to please. "Anybody in charge of a horse thinks he knows better than the farrier how it should be shod."

Apprentices are seldom taken in London, and the number of lads taught is insufficient to supply the trade, which depends largely on men coming in from the country.

The trade is one requiring physical strength and nerve, as well as skill, and, though not in itself unhealthy, involves more than ordinary liability to accident. The work is hard, hot and dusty, causing a tendency to drinking habits which are also encouraged by the fact that the men do not get their meals at reasonable intervals. Men are worn out at the comparatively early age of fifty, and after forty-five it is not easy to obtain a fresh job.

About a third of the men are members of the Permanent Amalgamated Farriers' Protection Society, which has been formed by the amalgamation of a number of small associations.

Smiths.

These men, with whom are counted their assistants, called *hammer-men*, may best be considered in three groups, according to the character of the work in which they are engaged.

1. *General Engineering Shops* employ the greater number of the men, and recognized wages are: for smiths at heavy fires (large and heavy work), £2. 2*s*; for hammer-men at ditto, 28*s* to 30*s*; smiths at light fires, 38*s*; hammer-men, 27*s*. These rates are not, however, by any means paid in all shops, and in some are about 5*s* lower all round. The returns of a number of firms show a range from 43*s* to 34*s* for smiths, and 29*s* to 23*s* for hammer-men, for an ordinary week of fifty-four hours. Overtime, of which there is not much now, is paid for at the rate of time and a quarter for the first two hours, and time and a half for any further extension of extra work. Piece-work prevails to a certain extent, private firms generally allowing men to earn up to 50 per cent. above time wages, and railway shops up to three-eighths extra. If more than this is earned prices are cut down, so the men's organizations take special measures to prevent it, and go so far as to fine the "greedy" member who attempts to earn too much. Specimens of piece earnings of smiths, working ordinary hours, are £2. 8*s*, £2. 6*s*, £2. 4*s*, £2. 2*s* (several cases), £2 and 38*s*, whilst hammer-men range from 30*s* to 20*s*. In a few places there is a system of task work, much objected to by the men; the work is measured each day, and a man soon finds himself discharged if he has not done his allotted task. The work is fairly regular; pro-

bably smiths in engineering shops are better off in this respect than any other large section of the metal workers, and the hammer-men do not fare badly. The work being heavy and dirty is not so generally resorted to as that of the more genteel fitter, and as there is only one smith to several of the others, the former stays on even when many of the fitters are discharged. The unemployed returns of the "men's" largest organization (The United Society of Smiths and Hammer-men) point to an average of 2 or 3 per cent. in summer and 5 per cent. in winter. Lads are taken on to learn the trade, but are not apprenticed. They are put to various jobs, and use light hammers. Whether they ultimately become smiths or hammer-men may depend to some extent on their aptitude, but is largely a matter of influence. If a lad finds favour with the foreman, or has influential friends in the shop, he will be put to a light fire over the heads of the hammer-men; if he has no such aid he is likely to remain a hammer-man for good and all, because, unless he gets some experience of smiths' work in the shop in which he is brought up, he cannot take a smith's place elsewhere, and is rarely able to acquire the necessary knowledge afterwards.

2. *Ship-repairing Yards.*—Roughly about a fifth of the smiths earn their livelihood mainly in these yards. Work is precarious, but the scale of remuneration leaves nothing to complain of, the smith, like his fellows in other trades, being able, owing to the nature of the work, to command almost his own terms. It is all time-work, and wages, which have lately been raised, are for smiths, £2. 2*s* to £2. 5*s*, and hammer-men, £1. 10*s* to £1. 13*s*. Overtime rates are on the same scale as those of boiler makers, &c.

3. *Building Trades.*—There is a considerable number of men engaged in this branch. They are usually known as "general smiths," and closely allied to them are the builders' fitters. They are a body of skilled "all round" men, and their work is of a varied character, including the making

and fixing of ranges, and all kitchen work, hot-water fittings, constructional iron-work in houses, such as iron staircases and sashes, and iron pipes. They also do plate iron-work, as shovels, ovens, and cases for strong rooms. The work done in London is nearly all of a high-class character, and executed in small quantities. Cheap and quickly made stuff comes from the country. Londoners in this trade, as elsewhere, are noted for good work, and men are sometimes sent long distances into the country to carry out orders of a special kind.

In the case of the larger and better class of builders, the smiths are in the direct employ of the firm, and work usually under trade union conditions, earning 38*s* per week for the customary hours of the building trades (an average of forty-eight per week). But among the smaller class of employers there is a complicated system of giving out orders for smiths' work, involving a good deal of sub-contracting and piece-work. The builder having received the order passes it on to an agent, who sends it to a manufacturer; the latter gives it to a piece master working in his own shop, who takes it at a certain price and gives it out to his mechanics. The men are allowed to draw day-work rates while the job is in progress, with a promised bonus at the end if it works out well. Not infrequently it turns out otherwise—instead of a plus there is a minus—and the men have to work the next week "on a dead horse," in order to get straight again. Shops of this character only employ two or three good men, the rest being inferior or semi-skilled hands, mostly young men, at 4½*d* or 5*d* an hour. They work much longer than the recognized hours of the trade, and it is said that in some cases the piece-master will provide bread and cheese and beer for his men to prevent their leaving for meals. The best workers, getting their full share of bonus, may take from £100 to £120 a year, but the general average would be below £80. The bonus is not always

equally divided, and sometimes is kept entirely by the piece master.

Winter is the busy season, beginning in November, when there is a demand for the fittings for new houses. In the spring, too, trade is brisk, more particularly in the West End and amongst the smaller building firms, in connection with the repair of houses for rich people coming to town—boilers, ranges, and other fittings require attention. Work of this kind is almost invariably put off till the last moment, and consequently much overtime is worked in March, April, and May, eighty or ninety hours being a not uncommon week's time. Part of June and all July are slack, but, taken altogether, fairly full work is obtained in this trade.

Men change their employer very frequently, being taken on and discharged as required. There are no apprentices. Boys learn the trade best in a shop where general work is done, rising gradually, and earning full wages by the time they are about thirty.

Much that is written in the above paragraphs, regarding conditions of work and wages, applies also to *whitesmiths*, a very small and decreasing body of men in London. Their special line was considered to be hot-water apparatus and fittings, but they do any kind of small particular work in iron for builders, and their work is in fact hardly distinguishable from that of the general smith on the one hand, and that of the locksmith and bellhanger on the other.

The trade of the smith is decidedly healthy, and the men being naturally of strong physique, are able, notwithstanding the hardness of the work, to keep at it till an advanced age, loss of bodily strength often being counterbalanced by the skill and knowledge gained of experience, the work being of such a varied character as always to leave "something to learn." The customary complaint is

made that men past fifty are unable to get work at a new shop, but old servants are too valuable to be lightly dispensed with, and are only discharged in the event of trade being so bad that a firm cannot in any way afford to keep them on. The fault of the men in the past has been a tendency to drink, but in this respect much improvement has taken place of late years.

Organization is in a fairly advanced stage, the majority being members of a union, as will be seen by reference to the particulars of trade organization given at the end of the next chapter (pp. 353-65), where also will be found statistics of wages paid.

CHAPTER III.

OTHER WORKERS IN IRON AND STEEL. (*Section* 16.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females. All Ages.	Males. —19	Males. 20—54	Males. 55—	Total.
(1) Various Iron & Steel manufact.	69	990	4824	605	6488
(2) Gun & Sword maker	19	140	748	146	1053
(3) Tool & Cutlery-maker, &c.	167	225	1142	243	1777
(4) Type-founder, Die & Coin-maker	59	288	902	127	1376
TOTAL....	314	1643	7616	1121	10,694

There is more than the average of young people in type-founding, &c., but taken together the trades show the ordinary age proportions. (*See* diagram.)

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
2640	1955	1747	4352	10,694

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Bolt maker, oliverman, drum and keg maker, galvanized iron worker; iron founder, caster, moulder, core-maker, pattern-maker, trimmer, fireman; tank-maker, rivetter; safe-maker.

(2) Action-maker, barrel forger, filer, borer, grinder, prover, lock, muzzle, pin, nipple, stock, trigger-maker; blade forger, grinder, hardener, polisher, mounter, embosser, hilt and scabbard-maker, &c.

(3) File, saw, and plane-makers; table, pocket, pen, hunting-knife maker, forger, grinder, hardener.

(4) Wood-type cutter, punch cutter, mould maker, caster, rubber, dresser, setter, justifier, breaking-off boy, stereotyper, electrotyper; medallist, stamper, seal engraver and forger, die sinker and engraver, heraldic engraver, embosser.

Enumerated by Families.

Sex	Males		6494	Heads of Families, 6561.
	Females		67	
Birthplace	In London	57 %	3745	
	Out of London..	43 %	2816	
Industrial Status ..	Employer	7 %	468	
	Employed.....	87 %	5687	
	Neither	6 %	406	

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	6561	6059	18,228	444	31,292
Average in family..	1	·92	2·78	·07	4·77

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	4550	14·5
2 & under 3 ,,	7401	23·7
1 & under 2 ,,	8490	27·1
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	9807	31·4
Less than 4 persons to 1 servant and 4 or more to 2..	411	1·3
All others with 2 or more servants..	189	·6
Servants	444	1·4
	31,292	100

	Inner.	Outer.	Together.
Crowded..	52 %	30 %	38 %
Not ,, ..	48 %	70 %	62 %

DISTRIBUTION.

East ..	Inner 4203 / Outer 3351	7554
North	Inner 881 / Outer 4495	5376
West ..	Inner 560 / Outer 1776	2336
Central	Inner 2333	2333
South-East	Inner 983 / Outer 6518	7501
South-West	Inner 3092 / Outer 3100	6192
		31,292

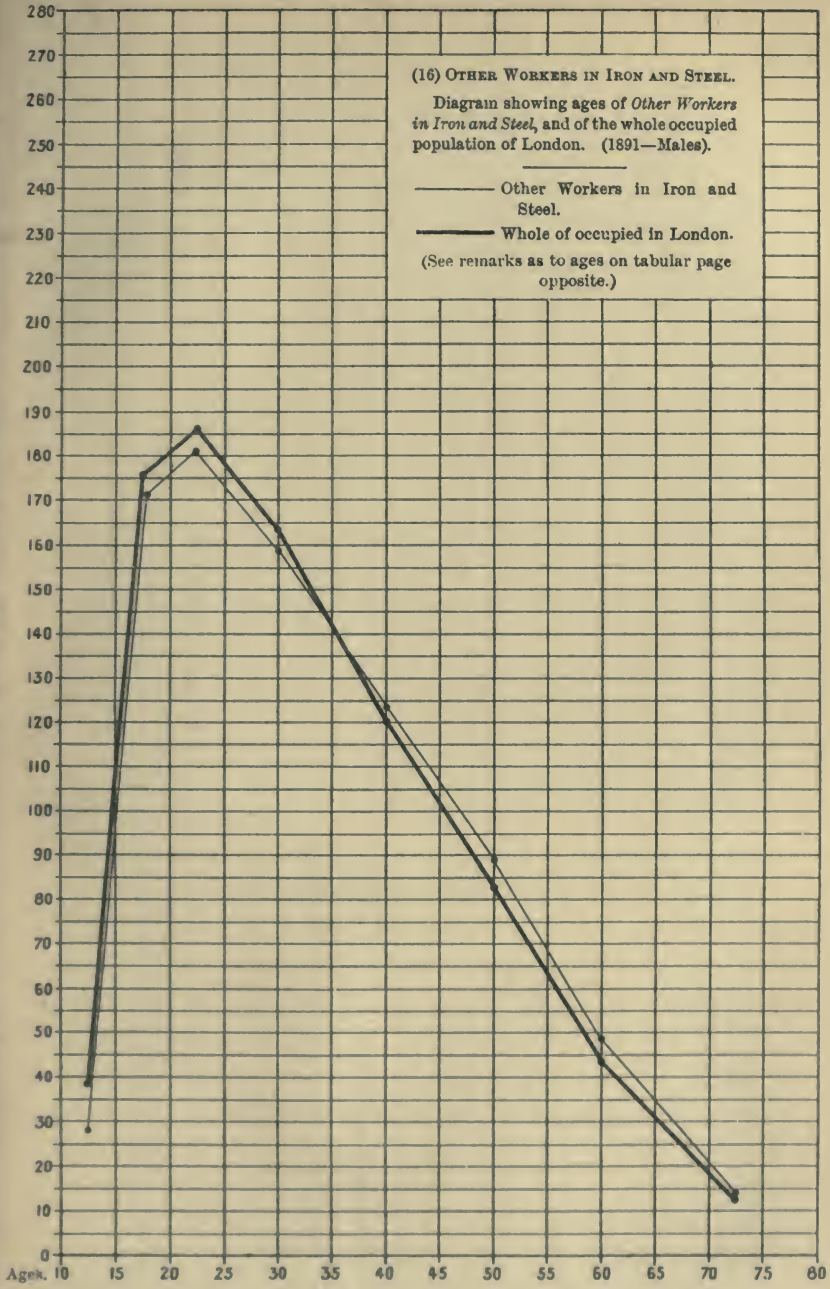
Inner 12,052, or 38 %
Outer 19,240, or 62 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Various iron and steel manufacturer	192	4	990	5130	64	107	1	6488
(2) Gunsmith	54	1	119	714	15	52	—	955
(2) Sword, bayonet-maker, cutler.....	3	—	21	68	3	3	—	98
(3) Tool maker, dealer	113	7	128	651	23	129	3	1054
(3) Cutler and scissors-maker	59	7	59	261	23	102	2	513
(3) Pin, needle, steel pen and pencil (wood) maker	12	3	38	57	98	1	1	210
(4) Type cutter, founder	22	1	223	630	23	17	—	916
(4) Die, seal, coin, medal maker	48	3	65	255	31	57	1	460
TOTAL.....	503	26	1643	7766	280	468	8	10,694
	529		9689			476		

Proportion of Employers to Employed–1 to 18

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



Iron-founding.

Under the general heading of "Other iron and steel Manufactures," the census includes workers in a number of minor London industries, the only one of importance being iron-founding. This trade is carried on in a small way by many firms as a branch of their general engineering business, but a few confine themselves entirely to it, their work consisting mainly in the making of columns, girders, railings, posts, and other iron-work required in the construction of buildings.

In no case is the work done on a very large scale, it being, apart from engineering shops, almost entirely restricted to the fulfilment of the immediate requirements of London builders and architects, whose convenience it often suits to have their orders executed where they can exercise a general supervision. The skilled mechanics are divided into pattern-makers, moulders, and core-makers, and the unskilled or semi-skilled men into trimmers, firemen and labourers.

The character of the work performed by each has been described (p. 306), except that of the core-makers, who are responsible for the moulds for the inside linings of the iron castings.

Hours and Wages.—The hours of labour are fifty-four per week, divided as in the other metal trades. The standard wage is 38*s* for moulders, save that moulders in loam usually get 2*s* a week more than the rest. For pattern-makers the trade union rate is 9*d* an hour, or 40*s* 6*d* a week; in non-union houses wages fall to 38*s* and exceptionally to 36*s*. Wages generally have remained stationary for some years and although there has been a reduction of hours from a nominal sixty (really fifty-eight and a half) to fifty-four, the work is done at much greater pressure, it being a common practice for customers to delay giving their orders till the last moment, and then to require them to be performed in a great hurry, and this conduces also to a good deal of overtime, paid for at the customary extra rate.

Appliances for assisting the workman have been vastly improved of late years, but no method of sub-division has been introduced: the man who makes the mould does the casting also. The men are all paid by the day, but some complaint is made of a system of task-work by which, it is alleged, the time of a job is set by a picked hand with the aid of every appliance and a labourer to wait on him, and that then other men, without equal advantages, are expected to keep up to the standard thus obtained. Trimmers and firemen are promoted from the ranks of the labourers, and get from 26*s* to 28*s* against the labourer's 24*s*.

Regularity.—Though this cannot be called a season trade it is, so far as dependent on building operations, busier at one time of the year than at another.

Partly as a result of overtime and partly owing to appliances which have increased the power of production, the unemployed are rather more numerous proportionately than elsewhere in the metal trades, and probably average 7 to 8 per cent. exclusive of the sick and superannuated. There is a good deal of irregularity, a large number of the men being continually on the move.

Training.—There is no apprenticeship system. Lads commence at fifteen or sixteen, and work their way up, starting with 5*s* a week; often they change firms two or three times, improving a little at each place. The recognized limit is one boy to three men, but in London the proportion is not so large as this.

Organization.—The men are well organized. The Friendly Society of Iron-founders has among its members from two-thirds to three-fourths of the London mechanics, and includes perhaps the pick of the men. The number of unionists would probably be larger but for the heavy scale of contributions, caused by the many benefits given. The Pattern-makers' Society includes about three-fourths of the London mechanics in their line of work, whilst others belong to the engineers' societies. The labourers also have their unions, but of a much less permanent character.

TANK-MAKING.

This small industry, although combined with iron-founding in the census, is a kindred trade to boiler-making. It employs some 250 to 300 men in London. The men are divided into three grades, with nominal time wages, as follows:—Tank-makers or rivetters, 6*s* per day (nine hours); holders-up, 5*s*; caulkers, paid in proportion to work done by rivetters. There is an extra allowance of 1*s* a day for out-door work. With the exception of one firm, however, which is outside the pale of trade union influence, the work is all done on piece, and the actual hours put in are only about forty per week. The men work in gangs consisting of a rivetter, holder-up, and one or two boys. Taking the books of one of the best firms, an ordinary week showed the earnings of twelve gangs (one boy to each) to amount to £58. 13*s*, giving an average of £4. 17*s* 9*d* per week per gang, divided as follows: rivetters, £2. 8*s* 10*d*; holders-up, £1. 14*s* 3*d*; boy, 14*s* 8*d*. The range from highest to lowest earnings was, in even figures: rivetters, £3. 3*s* to £1. 14*s*; holders-up, £2. 2*s* to £1. 3*s*; boys, 18*s* 6*d* to 10*s*. The time worked by each set averaged about thirty-five hours. Of course there are differences in the quickness and skill of the men, and some classes of work pay better than others, but the variation in wages is principally caused by difference in the number of hours worked. One caulker is usually employed to three gangs of rivetters, and he is paid in the proportion of one-sixth of their combined earnings, or the same amount as the rivetters, viz. £2. 8*s* 10*d*.

Regularity.—In regard to the quantity and regularity of the work, too, the men are rather better off than the boiler-makers. There is a busy season in the autumn, when tanks are largely used for export purposes in lieu of packing cases, and again in the spring, when the building trade is brisk, there is a good demand for tanks for private houses.

Trade is slack in the winter. Nearly three-fourths of the men have practically regular work, and of the rest most are employed from half to three-quarters of their time, the out of work margin being about 5 per cent.

Training.—No apprentices and but few boys are employed, many of the so-called "boys" being young men, and some of them married. This is partly due to the attitude of the men, who prefer to have the help of labourers with some knowledge of the work to the trouble of teaching boys.

Metallic Casks.*

This is a London trade, which has been established about forty years, and employs some 350 persons, including one hundred youths and boys. It is an offspring of tin and iron-plate work, and is carried on by half a dozen firms, one of which is a paint manufacturer's, making only such goods as it requires for its own purposes. Part of the work is done by hand, but most of it by steam machinery, the latter having been introduced, it is said, partly because the men, in the early days of the industry, earned such good wages that they were often unwilling to come in to work during the first part of the week, and so the employers had to find some substitute for their labour in order that urgent orders might be fulfilled.

Process of work.—The casks are of three kinds, termed respectively drums, kegs, and tapers. Drums are principally used for containing oils and acids, and are made in sizes to hold from one to ten gallons. The sheets of wrought iron of which they are constructed are obtained in the provinces, and vary in thickness from eighteen to twenty-three to the inch. They are first cut in a guillotine machine to the width required for the particular size of drum to be made, and then, after being dipped in an acid solution, are coated

* As the employers in this trade declined to give information, we are indebted to, and have to rely mainly upon, the evidence of men employed.

with a surface of lead or tin. The edges of the sheet of metal are next folded over by a machine, whilst another machine rolls the sheet into a cylinder, and the two edges being buckled and grooved tightly together, the body of the vessel is formed. An iron hoop is then slipped over it, and the bottom and top pieces, which have been previously stamped out by means of dies, are affixed, and the edges dipped in a pan of hot lead or tin to ensure their being firm and air-tight. A hole is next made in the top, and a neck or spout soldered on. The drum is then ready to be tested. For this purpose it is filled with air to a considerable pressure with an air-pump, and is held under water; the tell-tale bubbles caused by the escaping air at once reveal the least defect, which is remedied accordingly. If sound, the vessel receives an outside coat of oxide paint, and is then ready for use.

For kegs, which are used for holding paints, varnish, &c., the general process of construction is the same, save that the iron is not coated and that the bottoms are rivetted on instead of being dipped in hot metal, whilst the tops are held with clips fastened to the sides of the kegs, no spout being required.

Tapers, so-called because they have a tapering neck—being in effect iron bottles—are made similarly to the drums so far as the body is concerned. The neck is cut out by hand, rolled in a machine to the required shape, and soldered on.

Steel Barrels.—Until quite recently steel barrels were made entirely in Germany, Belgium and France, but the work has now been started by a firm of metallic cask-makers. The barrels are made partly by machinery and partly by hand, to hold from 20 to 120 gallons, being intended to contain large quantities of oils and acids. They are coated with lead or tin, similarly to drums.

Hours and Wages.—A week's work is nominally considered to be one of sixty hours, but in reality, it being a

piece-work trade, hours vary from about fifty-two to fifty-four. The shorter time (fifty-two hours) prevails in one or two shops owing to a quarter of an hour being allowed for lunch in addition to the ordinary meal times. In the chief firms the system is almost entirely piece-work, prices being based on a scale which was originally agreed to between the firm which first introduced the industry, and its employees. But considerable modifications have since been made, a certain percentage being deducted for use of machinery, &c. The work is divided into numerous branches, such as cutters, tinners, dippers, neckers, taper-makers or benchmen, painters, and testers; the makers again are often sub-divided into those employed on kegs and those doing drums, the latter being the more skilled work.

The most competent men are the taper-makers, whose wages run up to 40*s* or 50*s* per week in the leading firms. They work together and share their earnings equally, as do also the dippers and neckers, whose pay may average nearly 30*s*. The cutters have each a time rate of pay, fixed by the foreman according to his judgment of the ability of each individual worker, and the total earnings of the department are shared in proportion to this time rating. Thus amounts taken vary greatly, ranging from perhaps 20*s* for the younger and less competent workmen, to 45*s* or 50*s* for the older and most skilled. Testers work independently, and so also do painters, and here again the variation in earnings is considerable. As an example, it is said that exceptional men will paint one hundred five-gallon drums in two hours, taking 1*s* 8*d* for the work, whilst slow workers would only perform half this task. From 20*s* to 40*s* is about the extreme range, with an average rather below 30*s*. These are the wages of the chief houses; rates are lower in the others, more particularly where the day-work system prevails.

Other particulars.—The trade is not seasonal. It depends to a considerable extent on Government contracts; apart

from this the work is executed to the orders of oil and paint merchants, and is largely required for export purposes. In slack periods—which have been frequent of late—short time is worked. The men are rarely discharged and very seldom change their situation.

There are no apprentices. Boys are taken on and pick up the trade pretty quickly, most parts of it being easily learnt.

The dipping, tinning, and painting are said to be somewhat injurious; otherwise the trade is healthy, and men work at it till a fairly advanced age.

Organization.—The men have no organization. A trades union was started, and lasted nearly two years, but then failed.

Corrugated Iron-work.

The construction of corrugated-iron roofs, doors, sashes, &c., for workshops and outbuildings, though said to be largely encroached upon by carpenters and others, is considered to be a separate trade. Corrugated iron, which is manufactured mainly in the provinces, is largely used on account of its strength, durability and cheapness. The position in the industrial category of the two hundred or so men, who confine themselves to this work, lies midway between the metal and building trades. Often they have started as boys in an iron-foundry or works, and their hours are those of the metal trades, but they resemble the builders in that their work is quite seasonal—busy in summer and slack in winter. Wages of mechanics range from 5*s* to 6*s* a day, and of labourers 4*s* to 4*s* 6*d*. (All time-work and no sub-contracting.) Overtime is scarce and slack time frequent, there being much irregularity and shifting about from one employer to another. The men travel about the country a good deal, being paid extra if sent out to a job by a London firm. In this case married men leave their wives and families at home, and they, by previous arrangement, draw an allowance direct from the firm during the men's absence.

Iron-safe Making.

This is a small and quite distinct trade, and is carried on in London by about half a dozen manufacturers. With the exception of a few men, who are employed in fitting the safes and are paid 8*d* an hour, the work is entirely by the piece. This being a patent trade, and each firm having its special patterns, it is not practicable to have any general scale of prices, and consequently a bargain is struck between each employer and his workmen as to the price at which any job will be executed, with the result of giving the mechanic, on the average, something between 8*d* and 10*d* per hour for his work. In some instances there are labourers to assist the skilled workmen, and these are paid sometimes by the employer and sometimes by the mechanic, according to the character of the work and the custom of the shop. In the making of small safes no assistance is required, whilst in constructing large ones a labourer may be needed all the time. The nominal week's work is fifty-four hours, but, as in most piece-work trades, the men rarely make a full week, and the average is probably below fifty hours. Overtime, except when fixing work at banks, &c., is almost unknown, and the season of the year makes but little difference, though there is rather more to do in winter than in summer. Trade was good for some time, but has been slack for the last two years. Possibly the building of the large safe deposits has had something to do with this falling off. It is true they are constructed by safe-makers, but when once made they are almost everlasting, and render unnecessary a multitude of private safes. In slack periods men sometimes get work in a smith's shop, doing plate-flattening, and general iron fitting. There are very few indentured apprentices; usually boys are taken on at fifteen years of age and paid about 8*s* a week. They learn the trade under a mechanic, and serve in the customary way until twenty-one, being put on piece-work during the last two years of

their time. Capacity is lost at sixty years of age or sooner old men are kept on but they earn less. There are not many of them employed. The trade is well organized, and more than 90 per cent. of the mechanics in London engaged in it are said to be unionists.

Gun, Sword, and Bayonet Making.

In the manufacture and repair of small arms for sporting purposes a little work of superior character is done in the metropolis, mostly in connection with the retail establishments of West and Central London; but the bulk of those returned by the census are engaged in distribution rather than manufacture.

There has also been for many years a limited high-class trade done in the manufacture of swords and cutlasses, either for military or naval officers, or for presentation purposes, but it is only lately that, through the intervention of a German firm, who have opened a factory here in conjunction with an old-established sword-maker, a large Government order for the manufacture of sword-bayonets has been secured to London. Formerly this work was mainly done abroad, and it is suggested that the firm, in training the men and providing facilities for doing it here, has done the Government a service, as otherwise we might have found ourselves in a difficulty in case of becoming embroiled in a European war.

Here, too, as in ordnance manufacture, machinery of the most modern character and constructed on an excellent plan to ensure the safety of the workers, is very largely used, and there is much sub-division of labour, the bayonet passing through some thirty different processes, each performed by a distinct set of workmen. The men, some of whom are Germans, are drawn from other branches of the metal trades—grinders, polishers, machine hands, filers, &c. The machinists are on piece-work based on a standard of 6*d* per hour, and probably average from 20*s*

to 25*s* a week. The filing, which is done by hand, requires more skill and is rather better remunerated. There are a number of skilled fitters (all English, and trade unionists), paid by time at 8½*d* per hour, who keep the machinery in order, and prepare the tools required; and the finishing, testing, &c., are of course done by thoroughly competent men.

Judging by the severe tests to which the weapons are put before being passed as satisfactory, there is no doubt of the sound character of the work turned out. The working hours are fifty-two per week, and, save when it is necessary for some department to stay a little late in order to catch up with the rest, there is scarcely any overtime. Up to the present the work has been fairly regular; what it will be in future must largely depend on the disposition of Government contracts.

Tools and Cutlery.

Of the making of tools there is very little indeed in London. Planes are made by two or three firms, but the trade as a whole is quite small and decaying, unable to stand against cheap provincial competition. The men employed are usually on piece, and earn fairly high wages when work is brisk, but the work fluctuates considerably. For the rest, the tool-makers returned in the census, are almost entirely engaged in repairing or dealing.

A quiet old-fashioned and interesting little trade in London is that of *cutlery*. The manufacturing part is confined mainly to hunting-knives, boar-spears, table and pocket-knives, and butchers' cleavers, with just a little work in dressing-bag fittings (nail files, glove and button hooks, pallet-knives, &c.) and skate blades. The hunting-knives and spears are very finely made, as indeed is all the work; some of the pocket-knives are quite a revelation, being fitted with scissors, tweezers, gimlet, corkscrew, button hook, needle, pen, pencil, and a dozen other more or less useful appendages, all most delicately finished and bearing

elaborate designs worked out with hand files. The amount of ingenuity and time which may be expended in thus adorning a single blade is remarkable, the hardness of the steel (which is double shear, as against the single shear of Sheffield work), allowing of its being filed to the finest point of detail. There is about the London work a degree of finish and durability which are only possible where, as in this case, the articles are made in very small quantities by specially skilled men, and command high prices. The blades, which are usually fitted with African ivory handles, are distinguished by having the word "London" stamped upon them, there being an old statute which only allows of this mark being placed upon edged goods actually forged in London, though even in this the spirit of the law is said to be sometimes evaded by having the blades forged here and then sent elsewhere to be mounted.

Only about half a dozen firms supply the genuine London cutlery, which is manufactured by a few small master-men, employing from two or three to eight or nine assistants, and even these few are provincial men, who, acquiring their first knowledge of the trade in Sheffield or at a general cutlery shop in some other country town, have afterwards come up here and been initiated into the peculiarities of London work.

Save for the fact that steam-power is now generally used in lieu of manual labour to turn the grindstone, the work is carried on in primitive style, the same man working alternately at bench and stone, and doing the grinding, filing, polishing, &c., of an article throughout. The forging, hardening and mounting are done by separate men. Hardening is a most important process, for upon it depends the suitability of the steel for the purpose required. For instance, the difference between the quality of the blade of a pocket-knife and that of a razor lies in the hardening, the harder the metal the sharper can it be made.

The trade is to some extent declining, partly because of

the improved quality of Sheffield work, and also because wealthy people will not pay the fancy prices that they once did.

Hours of work are fifty-two per week, and wages about 9*d* and 9½*d* per hour. Work is fairly regular, with a little extra pressure for Christmas goods, and a corresponding slackness after.

In addition to those employed on new work, there are a number of men who do grinding and repairing only. These, too, are "provincials," including several Sheffieldites, and work occasionally on the premises of a firm of cutlery dealers, but more usually are on their own account. Hiring a room at a workshop where steam-power is available, and paying an inclusive rent of about 10*s* per week, they form a connection amongst the shops, and take out such work as is left with the shopkeeper for repairs. Sometimes they work single-handed, sometimes two together, or occasionally one man may employ two or three others, but it is always in a small way. The competition for this work is keen, and prices low, with the result that earnings are not high, 25*s* to 30*s* perhaps, after paying expenses. These men, who have largely superseded the itinerant knife-grinder, also repair various kinds of metal work, and may have some pressure of trade during the London season, or when a spell of severe weather causes a brisk demand for skate-grinding.

Type-founding.

London is the original centre of the English type-founding trade, it having been introduced here some two hundred years ago. A small select industry of an almost stationary character now, owing to the common practice of stereotyping, it is carried on in the metropolis by about eight firms, and by a few others in the provinces.

Process.—Type, which is usually made from an alloy of lead, antimony and tin in certain proportions, is cast by machinery from prepared moulds and matrixes, varying

according to the size and style of the "fount" to be produced (each different style of type is called a "fount"). The mould, in which the body of the type is made, is formed by the moulders in two parts, one attached to the machinery and the other movable, so that it may be adjusted to the proper width of the letters. The matrix in which the face or letter is cast is prepared by men termed justifiers, with the aid of a steel punch, on which the desired letter has been cut. The machines are driven either by steam or hand-power, and the men who have charge of this work are called casters. When the type leaves the machine it is taken by boys, who, seated at a table, break off a wedge-shaped bit of metal which has adhered to its lower surface, and it then passes to the *rubbers* who rub each side of it with a fine steel file or upon circular stones to remove any rough edge which has remained and make it perfectly rectangular. The setters then range the types in long lines ready for the dresser, who cuts a groove in the bottom of each type, thus enabling it to stand more firmly on its "feet"; gives the necessary polish and finish, producing the silvery appearance characteristic of new type; and casts out any defective letters. The type is then packed, and goes to the warehouse.

Remuneration.—Taking the men in the order of their work, the mould-makers, who come first, form a very small and highly skilled section of the trade; theirs is day-work, and wages range from 42*s* to 50*s* a week. Only the largest firms employ their own mould-makers, the rest relying on two or three small firms, who do this work for the trade.

The justifying is also a comparatively small and skilled branch. It is also day-work and well paid, wages being from 38*s* to 45*s*.

Men who do steam-casting are paid both by the day and piece. Each man has to attend to two machines. Day wages range from 35*s* to 25*s*, but the most frequent rate for competent men is about 8*d* per hour. Piece workers,

who are generally the younger men, average about 25*s*, as do also the hand-casters, though some of the men get more.

The rubbers are practically all on piece-work, the scale of pay for ordinary types being 2½*d* per 1000, with extra for the exceptionally small sizes. Large type is paid for by weight. Rubbing is generally considered to be the worst paid branch; a man cannot as a rule earn more than 6*d* to 6½*d* per hour, but on the big fancy types or the very small founts he does better. The men have a grievance in that, after the rubbing is done, the type goes to the dresser who casts out any bad type, for which no payment is made. This loss is estimated at from 5 to 6 per cent. The rubbers in one firm have a society into which they pay 3*d* or 4*d* a week in order to make good to a man his losses under this heading, but the society is said to be in a chronic state of bankruptcy. At this firm part of the rubbing is done by machinery, the men in charge getting 27*s* a week, and having to do a task of not less than 400,000 types. Occasionally a hand-rubber is put on weekly wages, and is then paid 24*s*.

Dressers earn on the average 36*s* per week or 8*d* an hour, all time-work.

Training.—Youths and boys form a rather large proportion (fully one-third) of those employed. Commencing as lads in the warehouse they become "probationers" in one of the different branches, and serve as such for about five years. As a rule they only learn one branch, or if they rise their upward progress is very slow, it taking several years to reach the higher stages.

Regularity.—Saving that warehousemen sometimes become dressers, the progression of the learner is the only movement that takes place. There is not much shifting from one employer to another. It is, at any rate so far as the older houses are concerned, a trade in which men may live and die in one situation, and is characterized by strong family ties: son, father and grandfather being

found in the employ of one firm. Naturally, under such circumstances, work is fairly regular, and the relations of employer and employed are generally amicable, being, in fact, in some cases of a sort of confidential character. Most firms consider that they possess their own special processes of manufacture, which their employees who are in the secret are bound in honour not to divulge. There is, however, some complaint, particularly among men employed by the more modern houses, of an increasing uncertainty of work owing to the development of machinery. In this connection especial mention is made of certain type-setting machines, which, by doing their own casting, dispense with the services of the ordinary type-founder for all work in which they are used.

Hours of work are, as a rule, fifty-four per week, but one old firm has adopted the eight-hour day, with, it reports, satisfactory results so far. Overtime is seldom worked, and in occasional periods of slackness the men are sometimes put on short time, but more usually are given a "mess" of imperfections, &c., to sort in order to complete founts or for special purposes.

Health.—The trade is not generally considered unhealthy now, though formerly it was regarded as such by the authorities. It was thought that the antimony used was productive of blood poisoning, but experience seems to have proved this not to be the case, the suggestion being that the metal is not made hot enough to allow of its giving off deleterious fumes. The rubbers' work is, to some extent, injurious on account of the fine dust made in filing, whilst the repeated similar motions of the hand in rubbing are said to produce a description of paralysis. The work is light, and the men seldom of robust physique.

Age capacity.—Men are very rarely discharged on account of old age, their experience sometimes making old men more valuable than the younger ones. On piece-work the effect of age is of course to lessen the power of working quickly and so to reduce earnings, but the employers are often tender to the old men, and give them the "fat"

work, as it is termed, and at least one firm gives pensions to those who have become worn out in its employ.

Organization.—There is a successful trade union, to which rather less than half the five hundred men in the London trade belong.

Dies, Coins, &c.

Of persons connected with the manufacture, repair, and sale of dies, seals, coins and medals, the census enumerates over four hundred, but for our purpose the ground will be sufficiently covered by some account of the work of the *Royal Mint,* which employs 162 persons, of whom 131 are actually engaged in the production of coins. There are artificers, including die-sinkers, engine-men and those employed to repair the instruments used, and there are first and second grade workmen and boys. The artificers, of whom there are thirty-four, are not trained on the premises but are skilled men from outside. They receive all the year round a regular weekly wage of £2. 2*s* to £3. 3*s*, and are allowed a fortnight's holiday. The other men are paid a minimum sum every week, whether at work or not, as "subsistence" money: 25*s* for first grade, 15*s* for second grade, and 10*s* for boys; and when at work receive an additional sum, based on the quantity of coins turned out, or on the hours worked: 2*s* 4*d* per thousand for gold, and 1*s* 8*d* per thousand for silver (more for gold because gold needs the more careful handling) if on piece, or 5*d* per hour if on time. The additional money, however computed, is shared in certain proportions: $\frac{9}{18}$ths to the first grade men, $\frac{6}{18}$ths to second grade men, $\frac{2}{18}$ths for messengers and tellers, and $\frac{1}{18}$th for boys, with the result that in addition to the subsistence money, first grade men during the year 1892-3 received 36*s* a week on the average; second grade men, 31*s* 6*d*; and boys, 15*s*. In a busy week the best men make altogether as much as £5 (inclusive of overtime, which is paid at time and two-thirds after 8 P.M.).

The regular working hours are from 8 to 6, with a

quarter to half an hour for lunch and one hour for dinner, excepting on Saturday, when the Mint closes at 1 o'clock. A good deal of overtime is worked just before Christmas, and, on the other hand, there is generally one month in the year when there is no work on hand.

Formerly the subsistence pay was lower and the piece-rate higher, but it was found that the men did not get beforehand, but either starved or pawned their clothes, or got into debt, while waiting for full pay to begin again.

Boys enter between thirteen and sixteen by nomination, after passing a civil service examination. They begin with 10*s*, but rise after five years to 15*s* subsistence. They are put through every branch, as the men are expected to shift from branch to branch when wanted. They pass into the first grade, provided they have no black marks, as vacancies occur; and at sixty, if they have served forty years, acquire the full pension of $\frac{40}{60}$ths of the average wage of their last three years, or under different conditions, a smaller pension.

There is nothing unhealthy in the work. The men are not allowed out during the day, but have a messenger who can be sent if they want anything from outside. They are provided with cooking stoves, &c.

Gold is received in ingots from the Bank of England and is assayed but not refined, and is returned to the Bank in the form of coins measured out in bags, "journeys" they are called, meaning originally a day's work, consisting of 701 sovereigns or 1402 half sovereigns. Silver is purchased by the Mint itself.

Trade Organization.

The various branches of the engineering, iron and steel trades are so largely inter-connected that some overlapping of trade organization is unavoidable. Instead, therefore, of dealing with each section separately, an intelligible idea

of the part played by trades unionism will be best conveyed by combining in one statement the particulars of all the societies connected with these allied industries :—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
		The Amalgamated Society of Engineers (1851).	7447		Donation, Contingent, Sick, Death, Accident, Loss of Tools, Pension, Benevolent Grants, &c. Union and non-union men work together. Relations with masters good. Men's wages for full week of 54hours enforced, and overtime rate.
		The Steam-engine Makers' Society (1824).	761		Donation, Contingent, Sick, Death, Accident money, Loss of Tools, Pension, has a separate Benevolent Fund. 54 hours full week and overtime rates enforced. Relations with masters growing worse.
24088	18712	The United Patternmakers' Association (1872).	190	11214	Donation, Contingent, Sick, Death, Accident, Loss of Tools' Benefits. Men's wage for full week of 54 hours enforced. Union and non-union men work together. Relations fairly good.
		The United Society of Boiler-makers and Iron-ship Builders (1834).	2300		Donation, Strike, Sick, Death, Accident money, Pension. Overtime rates enforced. Union and non-union men work together. Relations with masters very good.
		Amalgamated Society of Chippers and General Fitters	124		Strike, Death, Accident Benefits. Benevolent Fund.
		London and District United Society of Drillers.	350		Strike, Death, Accident money.
		The United Machine Workers' Association (1892).	42		Out of work, Strike, Sick, Death, Accident, and Pension money. Total membership (1894) 2400.
24088	18712	(*Carried forward*)		11214	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
24088	18712	(*Brought forward*)	—	11214	
906	632	The London Journeymen Scale-makers' Trade Protection and Benefit Society (1889).	77	77	Out of work, Strike, Sick, Death Benefits, Pension. Men's wage enforced. Relations with masters good.
9778	7136	The Friendly Society of Iron Founders of England and Wales (1809).	688	1133	Donation, Strike, Sick, Death, Pension, Accident, Travel Benefits. Relations on the whole good.
		The Society of Ironsafe Engineers (1874).	150		Sick and Death money.
		United Society of Tank Rivetters, Holders-up and Caulkers (1836).	190		Out of work and Death Benefits. Relations with masters good.
		Corrugated Ironroofers, Door and Sash-makers, and General Iron-workers' Union (1891).	40		Sick and Death money.
		United Trimmers, Firemen, and Labourers' Union.	65		Out of work, Death, and Accident money. Relations with masters fair.
916	630	The Amalgamated Type Founders' Trade Society (1889).	230	230	Out of work, Strike and Travel money. Union and non-union men work together. Usually friendly with masters.
12,267	9592	The Permanent Amalgamated Farriers' Protection Society (1894).	1400	3239	Offers Out of work, Strike, Sick, Death and Pension money. Relations somewhat strained with 'Bus and Tram Companies.
		The London Amalgamated Society of Hammer-men (1844).	160		Out of work, Sick, and Death money.
		The United Society of Smiths and Hammermen (1889).	1240		Out of work, Strike, Death and Accident money.
		Co-operative Smiths' Society.	49		Out of work, Strike, Sick, and Death Benefits. Superannuation Provincial Society.
		The Society of General Smiths, Fitters, Bellhangers and Whitesmiths (1890).	390		Strike and Death money. Union and non-union men work together.
47,955	36,702			15,893	

Thus out of a total of 36,702 males employed over twenty years of age, 15,893 are organized, or 43 per cent. In addition, there is a Land and Marine Engineers' Union, of which we have not been able to obtain any particulars, and a Marine Engineers' Union, Limited, founded in 1887, with educational rather than trade objects. This last has 10,630 members on its books in thirty-nine branches scattered in all parts of the world.

The employers have an Association of Ship Builders and Boiler-makers, and there is also a London Society of Foremen Engineers. The latter, which has 111 members, was started by a few foremen who felt somewhat keenly their isolated position. They maintain strict neutrality on trade questions, but meet to discuss mechanical and scientific subjects. They give out of work and death benefits and a pension, and also make grants to widows and orphans of deceased members.

Members are admitted to most of the Men's Societies in the last years of their apprenticeship and up to forty years of age, but the Amalgamated Engineers, the Iron-founders, the Drillers, the Scale-makers, and the Smiths and Hammer-men admit older men to part benefits for a lower subscription, as "Trade" or "Trade Protection" members.

Contributions for full members vary from 1*s* 6*d* (Amalgamated Engineers) to 3*d* (Amalgamated Type-founders) weekly. The Corrugated Iron-roofers and the Hammer-men and Labourers' Protection Union subscribe as little as 2*d* per week, but offer a sum of money at death or for strikes only. In the larger societies 1*s* is the usual contribution, and in return for this out of work benefit (generally called donation money) is offered for periods varying from 14 to 104 consecutive weeks. For strikes a special allowance is made, which is either added to the out of work pay or consists in 10*s* or 12*s* for a certain number of weeks, after which the members come on donation benefit.

£10 or £12 is given at death, and usually half the amount at the death of a member's wife. "Bed-money" of 6*d* or 9*d* is given to those on tramp, and £5 to £10 is paid for loss of tools. Members of a certain standing are given £100 if totally incapacitated.

Pensions are a special feature in the larger societies, and vary from 5*s* to 10*s* per week according to the number of years the member has been in the society; fifty-five is the minimum age qualification except among the scale-makers, who allow a ten years' member 3*s* to 5*s* if the funds in hand are over £300 or £500.

We have here to deal chiefly with a number of powerful and well-organized trade unions, the largest of which, and the one which, by reason of its numbers, policy and cosmopolitan character, probably exercises the greatest influence, is the Amalgamated Society of Engineers. It has branches not only throughout the United Kingdom, but also in Spain, India, America and Australia, and includes in its ranks smiths, millwrights, fitters, turners, pattern-makers, and in fact mechanics engaged in every branch of work which has to do with the construction of engines, machinery and ships. Thus its influence is effective not only on other organizations, but also in trades which have no organization of their own.

The interests of such a union are national rather than local, and this is true also of the Iron-founders, the Boiler-makers, the Steam-engine makers and Pattern-makers. Their members are in a position to understand that the well-being of the whole trade and not of any one section of it is that which has first to be considered, and consequently the extravagances—so often the result of a momentary enthusiasm—which are sometimes permitted by a small society, are here sternly repressed by a central Committee or Executive Council, a body whose only duty is to watch over the interests of the union as a whole.

Monthly reports are issued by the general secretaries concerning the state of trade in every town in the United Kingdom in which a branch society exists, and members are thus given an opportunity of ascertaining in what place they are most likely to find employment.

Accounts are published of each branch separately; and finally there is the consciousness in every branch that even the smallest of them will be effectively supported by the whole body in any question in which they may be held to be acting for the good of the trade.

The strength of their position enables these societies to combine moderation with firmness, whilst their widespread responsibility usually induces them to do so, and not only the men, but sometimes the employers also, have reason to be grateful for their existence.

The Amalgamated Engineers' Society, as already indicated, has shown great liberality in admitting members of allied trades within its ranks, and its policy has been fully justified by the results. But even in some of the larger unions there is the same unwillingness to open their doors that is so noticeable in several smaller London societies. They fear to admit men whom they consider less skilled than themselves.

It may be that this exclusiveness is due to a praiseworthy spirit of independence among the working men concerned, but, on the other hand, the more certain way of ensuring the interests of a trade would seem to be in the admission of men working in as many branches as possible provided that they are sufficiently skilled in their own particular work.

Besides this there is some feeling between men employed in these and other trades. For instance, the boiler-makers obtain some of the work which is also claimed by the shipwrights, and some which the drillers consider to be theirs. One of the stated objects of the steam-engine makers is to "regulate the relations between *workmen* and *workmen*" as well as between employers and employed.

Friction of some sort between societies whose members are employed on much the same kinds of work is almost inevitable. It is no doubt largely due to the feeling among working men that when a man has settled on one branch of work he should not poach on the preserves of others. The "handy" man, much as he is sought after by employers, is not as a rule popular amongst his fellow working men.

As a whole, there is a very strong feeling against piece-work, and the larger societies have special rules against its introduction in any new yard. The relations between employers and the various societies are friendly, and although the trades are highly organized, unionists and non-unionists often work together in the same firms.

The farriers stand somewhat apart from the other societies in that they are an exclusively London body, and are not included in any of the unions already mentioned. Formerly there were several distinct societies connected with the trade in London, but a process of amalgamation has been gradually going on, and they are now all combined in one union under the title of the Permanent Amalgamated Farriers' Protection Society.

This society has four branches—one each in North, South, East and West London. Their relations with the master farriers and professional "vets" are good, but there is some friction with the large omnibus and tramway companies.

Wages Statistics.

As with the trade unions, we make no attempt to separate the engineering, iron and steel trades in our wages statistics, because the work is mostly in the hands of large employers who have men belonging to each branch.

According to the census, the number of adult men actually employed is :—Engine and machine-makers, &c., 19,344; blacksmiths, 9592; other workers in iron and steel, 7766; or 36,702 in all. Of these adult males we have information as to earnings for no less than 13,203, employed by sixty-one firms as under :—

Engineers	30	= 61 firms usually employing 16,892 persons, of whom 13,325 are adult males, but of these 501 belong to other sections. *Vice versâ*, other sections contribute 379 men, making up the total of 13,203 as above. Those employed belonging to other sections, include brass-moulders, coppersmiths and other metal workers, engine drivers, carpenters, bricklayers, plumbers, painters, carmen and labourers.
Iron-founders	2	
Engine and machine-makers	4	
Boiler and tank-makers	2	
Iron-ship builders	3	
Domestic-machine makers	3	
Weighing-machine makers	2	
Tool-makers and cutlers	5	
Gun and rifle-makers	2	
Gas apparatus makers	3	
Type-founders	2	
Nail-makers	1	
Coin and seal-makers	1	
Royal Mint	1	

The earnings of these men in an average week are as follows :—

Below 20*s*	726,	or	5½ per cent.	Under 30*s*, 46 per cent.
20*s* to 25*s*	3507	,,	26½ ,,	
25*s* ,, 30*s*	1840	,,	14 ,,	
30*s* to 35*s*	1513	,,	11½ ,,	30*s* and upwards, 54 per cent
35*s* ,, 40*s*	3424	,,	26 ,,	
40*s* ,, 45*s*	1300	,,	10 ,,	
45*s* and upwards	893	,,	6½ ,,	
	13,203	,,	100 ,,	

These figures may be compared with returns made to the Board of Trade in 1886 from thirty similar firms, employing

3808 persons, exact details being given for 2774, of whom 2024 were adult males belonging to the trades dealt with in this chapter :—

	—20*s*	20*s*—	25*s*—	30*s*—	35*s*—	40*s*—	45*s*.
Our returns ...	5½ %	26½ %	14 %	11½ %	26 %	10 %	6½ %
	46 %			54 %			
Board of Trade returns	—	21 %	10 %	9 %	40½ %	12 %	7½ %
	31 %			69 %			

Allowing for the difference between our actual and the "full week's ordinary wages" of the Board of Trade, and for the very probable chance that the men for whom detailed rates of wages were not obtained by the Board of Trade averaged rather less than the others, the two returns confirm each other.

The principal group of skilled men earn from 35*s* to 40*s* a week, but the unskilled men, or those who, though skilled, work short time and earn only 20*s* to 25*s*, are an equally large body. Similarly, those earning, from whatever cause, less than 20*s*, are nearly as numerous as those who earn 45*s* or more, but neither extreme is largely represented.

As to the difference between busy and slack weeks, fourteen firms made special returns to us, from which and from the Board of Trade returns we obtain the following very similar results :—

	Busy.	Slack.	Percentage Reduction.		
			In numbers.	In earnings per head.	Combined.
Our returns	2478	1835	26	23½	43
Board of Trade returns ...	3547	2588	27	25	45

Our returns place the busiest weeks in January, February,

April, June, November and December, and the slackest in February, April, May, June, September, November and December, showing conclusively that being busy or slack is an affair of the particular work, and not of seasons. It may be assumed that men not wanted in one place find employment at another, and although there will be some loss of time it will be nothing like that which is represented by the percentages of reduction in numbers; but the percentage showing reduction in amount earned in slack weeks will hold good.

We have returns showing proportion of time and piece-work in busy and slack weeks from twelve firms, employing from 1447 to 980 men belonging to these trades, of which the particulars are given below:—

Men.		Busy Week.				Slack Week.			
		Men.	Wages.	Hours.	Rate.	Men.	Wages.	Hours.	Rate.
			s. d.				s. d.		
Time-work	Under 5*d* per hour	151	18 10	55½	4¾*d.*	107	17 8½	49¾	4¼*d.*
	5*d* and 6*d* ,,	225	28 6¼	59¼	5¾*d.*	169	23 4¼	48½	5¾*d.*
	Over 6*d* to 8*d* ,,	323	37 6¼	62¾	7*d.*	209	32 10¼	53	7¼*d.*
	Over 8*d* ,,	541	48 9	61	9½*d.*	267	41 10¼	53½	9½*d.*
		1240				752			
Piece-work	Under 20*s*	12	12 3	—	—	56	14 2	—	—
	,, 25*s*	8	22 1	—	—	63	21 3	—	—
	,, 30*s*	9	27 6	—	—	65	28 9	—	—
	,, 35*s*	19	31 4	—	—	9	18 5½	—	—
	,, 40*s*	9	37 8	—	—	6	36 10	—	—
	,, 45*s*	50	42 9	—	—	5	40 10	—	—
	,, 55*s*	15	48 8	—	—	19	50 5½	—	—
	55*s* and over	85	72 5	—	—	5	61 7	—	—
		207				228			

It will be seen that of the time workers a large number earn over 8*d* per hour, and that when busy these men work more overtime than those at lower rates. Although some short time is usual in slack seasons, the amount is not great amongst the better-paid time workers.

As might be supposed, the earnings of the piece workers are subject to the greatest fluctuations. While in the busy week 72 per cent. of these men earn at least 40*s* and 86 per cent. not less than 30*s*, the proportions are nearly reversed in the slack time—85 per cent. earning less than 30*s*, and only 13 per cent. reaching 40*s*. Short time, and a more leisurely style of work, probably combine to produce this result.

As to apprentices and other lads, we have particulars of the earnings of 3461, as follows:—

Average Earnings of Apprentices and other lads.

Our Returns, 1893.			Board of Trade Returns, 1886.		
Earnings.	Numbers.	Per cent.	Earnings.	Numbers.	Per cent.
Under 10*s*	1562	45	Under 10*s*	78	46
10*s* to 15*s*	1210	35	10*s* to 15*s*	45	26½
15*s* ,, 20*s*	640	18½	15*s* ,, 20*s*	35	20½
20*s* and over	49	1½	20*s* and over	12	7
	3461	100		170	100

Of those earning less than 10*s*, about one-tenth took 5*s* or under, and there are equal numbers at 6*s*, 7*s*, 8*s*, and 9*s*.

The number of women employed is very small. The census only returns 477 in London, and we have only received information respecting 5, who average 13*s* a week.

Social Condition.

Of a total of 36,700 adult males employed in these trades, about 27,000 are counted as heads of families, and so come under social classification. If we may

take them as represented by those as to whom we have particulars, we find 32 per cent. of those employed earning ordinarily less than 25*s* a week, and this proportion compares with 36 per cent. living under more or less crowded conditions. Next we find 25 per cent. who earn from 25*s* to 35*s*, and compare with 31 per cent. who live 1 or 2 persons in each room; and finally, there are 42 per cent. earning 35*s* and upwards, who compare with 33 per cent. of the central classes as follows :—

Comparison of Earnings with Style of Life (Engineers, &c.).

Earnings as returned.			*Classification of population.*			
Under 20*s*...	726, or	5½ per cent.	3 or more in each room,	16,000	or 12	per cent.
20*s* to 25*s*...	3507 ,,	26½ ,,	2 to 3 ,,	32,000 ,,	24	,,
25*s* ,, 30*s*...	1840 ,,	14 ,,	1 ,, 2 ,,	41,000 ,,	31	,,
30*s* ,, 35*s*...	1513 ,,	11½ ,,	Less than 1 ,,			
35*s* ,, 40*s*...	3424 ,,	26 ,,	More than 4 rooms			
40*s* ,, 45*s*...	1300 ,,	10 ,,	4 or more persons to a servant.	43,000 ,,	33	,,
45 and over	893 ,,	6½ ,,				
	13,203 ,,	100 ,,		132,000 ,,	100	,,
			Employers' families and servants	10,521		
				142,521		

We see that, although the difference is not considerable, a style of living obtains which is, on the whole, lower than the amount of earnings would seem to warrant. Of the fitters and turners as a class, this would hardly be true; but taking all the trades included in the figures, it probably is so. Wages are fairly high, but outgoings also are rather heavy. A well-organized and thrifty body—the men not only belong to a trade union, but are, to a very large extent, members of a friendly society or shop club as well (every firm of any importance has its own sick or accident club), and spend probably from 2*s* to 3*s* of

their week's earnings in these ways. The large majority of the men, too (with the exception of those employed by railway companies), live at some distance from their work. Many from choice, and many more because the uncertain tenure of employment does not make it worth their while to settle down in the neighbourhood of any particular firm, reside in the outlying districts, mostly of East or South London; and although reduced rent may compensate for increased travelling expenses, there are two and sometimes three meals per day to be obtained away from home. Custom is not generally favourable to the men bringing their food with them; and if they did so, the larger employers would not, as a rule, allow them to eat it in the workshop. And so the more usual practice is to resort to local eating-houses for meals, finishing up, not infrequently, with a "refresher" at the neighbouring public-house.

Then, again, there is often the necessity of providing some special working dress. Thus, fitters and turners wear overalls, smiths have leather aprons, and moulders find thick "moleskin" trousers a very useful protection from sparks and liquid metal. These are usually kept at the workshop, and are slipped on over the other clothing.

The wives of the men seldom earn money. Some of the labourers' wives do washing or charing, and amongst the mechanics the "missus" will occasionally carry on a little business, or take in semi-genteel boarders; but, as a very general thing, the "woman's sphere" is limited to the duties of her own household.

CHAPTER IV.

WORKERS IN OTHER METALS. (*Section* 17.)

Persons Represented.

Census Enumeration.

Census Divisions, 1891.	Females All Ages.	Males. – 19	Males. 20—54	Males. 55—	Total.
(1) Copper & Brass	64	1224	4385	549	6222
(2) Tin, Zinc, &c. .	595	1034	3878	499	6006
(3) White-metl. &c.	294	424	1758	162	2638
(4) Wire, Lamp, &c.	264	414	1506	210	2394
TOTAL....	1217	3096	11,527	1420	17,260

There is here a rather marked excess of those between 15 and 25 years of age, with a corresponding falling off in the proportion of older men. (*See* diagram.)

DISTRIBUTION.

E.	N.	W. & C.	S.	Total.
3565	3827	3375	6493	17,260

DETAILS OF OCCUPATIONS (FROM THE CENSUS DICTIONARY).

(1) Coppersmith, copperplate worker, copper brazier, worm-maker, brass engraver, finisher, founder, mediæval furniture maker, tap-founder, lacquerer, church-bell-maker.

(2) Beer-can, ice-mould, milk-can, tea and coffee-pot, oil-can maker, packing-case liner, tin-canister maker, zinc roofer, bath-maker, lead-pipe, shot and bullet manufacturer.

(3) Electrotyper, pewter pot, cruet stand, German silver, Britannia metal, electro-ware maker, art metal worker, door-plate engraver, piercer.

(4) Bird cage, metal gauze, mantel stand, eye wire, pencil case, gilt jewellery, match-box (metal) maker, dirt refiner.

Enumerated by Families.

Sex	Males		9417	Heads of Families. 9524.
	Females		107	
Birthplace	In London	68 %	6486	
	Out of London	32 %	3038	
Industrial Status	Employer	9 %	818	
	Employed	84 %	7993	
	Neither	7 %	713	

TOTAL POPULATION CONCERNED.

	Heads of Families.	Others Occupied.	Unoccupied.	Servants.	Total.
Total	9524	8516	26,458	552	45,050
Average in family..	1	·89	2·79	·06	4·74

CLASSIFICATION.

Numbers living in Families.		%
3 or more to a room	7655	17·0
2 & under 3 ,,	11,578	25·7
1 & under 2 ,,	12,026	26·7
Less than 1 ,, / More than 4 rooms / 4 or more persons to a servant ..	12,496	27·7
Less than 4 to 1 servant & 4 or more to 2 servants ..	437	1·0
All others with 2 or more servants..	306	·7
Servants	552	1·2
	45,050	100

	Inner.	Outer.	Together.
Crowded..	52 %	34 %	43 %
Not ,, ..	48 %	66 %	57 %

DISTRIBUTION.

East ..	Inner 6615	Outer 2307	8922
North	Inner 2514	Outer 7880	10,394
West ..	Inner 693	Outer 2411	3104
Central	Inner 5362		5362
South-East	Inner 1748	Outer 6876	8624
South-West	Inner 5154	Outer 3490	8644
			45,050

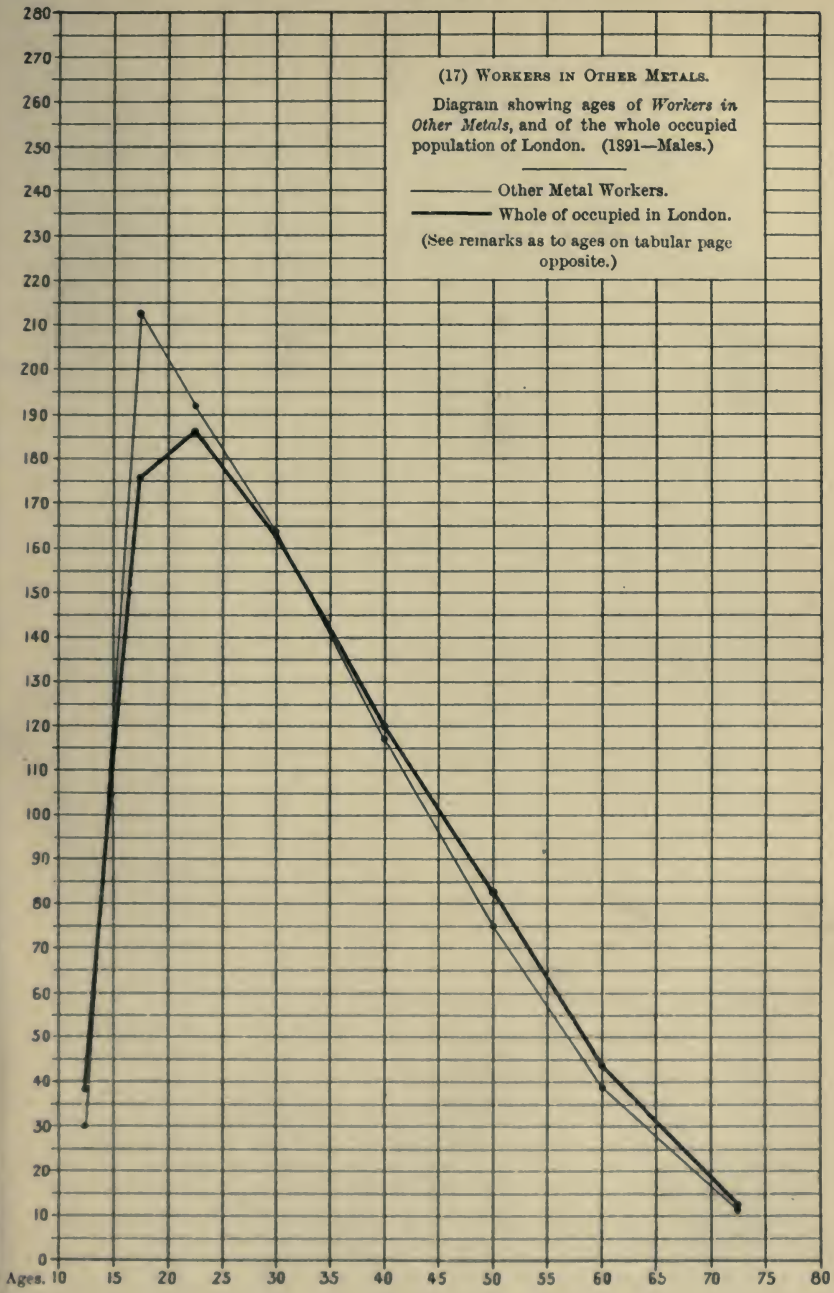
Inner 22,086, or 49 %
Outer 22,964, or 51 %

Status as to Employment (according to Census Enumeration).

Census Divisions (1891).	Employers. Males.	Employers. Females	Employed. Males. Under 20.	Employed. Males. Over 20.	Employed. Females of all ages.	Neither Employer nor Employed. Males.	Neither Employer nor Employed. Females	Total.
(1) Copper, copper goods	39	—	136	730	8	20	—	933
(1) Brass, bronze goods, brazier.....	170	3	1088	3831	51	144	2	5289
(2) Tin, tin plate, tin goods	175	5	828	2751	505	293	5	4562
(2) Zinc, zinc goods	76	1	123	638	6	91	—	935
(2) Lead, leaden goods..... ..	17	—	83	331	73	5	—	509
(3) Metal refiner, burnisher, lacquerer	75	6	297	1136	233	58	6	1811
(3) White metal, plated ware, pewterer	85	6	127	522	41	44	2	827
(4) Wire-maker, worker, weaver, drawer	93	3	268	622	158	153	9	1306
(4) Lamp, lantern, candlestick-maker ..	74	1	79	331	17	30	—	532
(4) Other workers and dealers.....	112	3	67	238	70	63	3	556
TOTAL.....	916	28	3096	11,130	1162	901	27	17,[illegible]
	944		15,388			928		

Proportion of Employers to Employed–1 to 16

Nos. (For explanation of method adopted in preparing this chart, see Note on Diagram 1.)



Introductory.

Copper, zinc, lead and tin are the principal metals here dealt with, and brass, bronze and pewter are the mixtures of these metals most commonly used. Copper and zinc combined make brass, copper and tin make bronze, and zinc and tin with a little lead constitute pewter, while special preparations yield the various kinds of bronze known as "gun-metal," "bell-metal," "manganese," and "phosphor-bronze." Iron enters into this chapter only in the form of wire, or as the basis of so-called tin plates, which are actually thin sheets of iron coated with tin.

Connected with these metals we find a complicated mass of trades of which we can only attempt to give a general idea. In some branches of the work London takes the lead, but on the whole Birmingham is the real centre. In the description which follows we shall begin with the workers in copper and its amalgams, passing then to pure zinc, to lead and to pewter, and finishing with the workers in tin plates and in wire.

Brass and Bronze.

The census counts 5289 persons in London as employed on these metals. There are small foundries and large, the small ones scattered all over London, the larger ones to be found chiefly in the eastern and southern districts.

In a large factory, where the articles are manufactured throughout and finished completely, an order passes first to the draughtsman; the drawings then go to the pattern shop and the patterns to the foundry, whence the castings are taken to the finishers to undergo work with lathe and file, and to be finally put together and polished up. Those engaged in the foundry and finishing shops form the most important branches of this industry.

In a foundry there will generally be moulders, core-makers, firemen, trimmers, and some ordinary labourers, the numbers depending on the size of the shop, but there are

also some foundries so small as to be worked by one man alone, or one man and a boy.

Moulders.—The moulder is the most skilled workman. He receives the pattern, which may be of metal or of wood, and from it forms the mould into which the copper, brass or bronze is to be poured in a molten state. Every mould is in two parts or sides, which are in effect a pair of iron frames prepared to hold damp sand. When at work the moulder stands by a trough of sand, and placing one of these frames or sides before him, he fills it to the brim with sand, and at the same time imbeds the patterns in such a way as to allow them to project slightly above its upper surface. This done, the second frame is filled in the same way; and after the surfaces of the sand have been sprinkled with brick dust to prevent adhesion, the two sides are placed one on the top of the other and firmly closed together, so that the impression of the exposed surface of the pattern in the first frame may be received in the sand of the second, which has no pattern imbedded in it. The mould is then re-opened, the patterns removed, and a clear hollow left for the liquid metal.

After this channels are cut in the sand—"runners" they are called—through which the metal can flow or displaced air escape, and then the two sides are clamped together, and set upon the floor ready for the pouring. The metal is melted in a crucible, and in this vessel is carried round by the fireman with the aid of the moulder and perhaps a labourer. This crucible is then tipped up by the moulder over each case, and a fiery stream flows leaping and hissing down the main runner into the cavities in the sand.

The ideal of a moulder is to make a perfect impression with a smooth surface and no flaws, and with as few rough edges or "burrs" as possible. When cool, the castings are taken out and handed to the trimmer who roughly prepares them for the finisher by breaking off the various articles from the runners which have joined them and by filing off the burrs, &c.

Moulders are, as a rule, time workers, but with a task qualification. A man seeking work will be asked how many moulds he has been accustomed to do, and will be engaged with a tacit if not expressed agreement as to the amount of work to be done in a day. The wages are from 36*s* to 44*s* for a full working week of fifty-four hours, at 8*d* to 9½*d* per hour. A few on piece will make as much as 54*s*. Firemen are paid 6½*d*, trimmers earn 6*d* or 6½*d* on time or piece, and core-makers make 4*d* to 6*d* per hour. These last are more often boys. They make sand cores round which the metal runs, leaving a hollow when the core is removed, as for pipes, water-cocks, &c. The higher rate (6*d*) is only made by the few who are particularly skilled.

The old system of "sets," which was formerly general in London, still survives in some shops. These consist of one moulder, one fireman, one trimmer, and one, or sometimes two, core-makers, and a cleaning-out boy to scrape out the sand from the inside of hollow castings. In these sets the men work together and are paid so much per cwt. of metal poured, or so much per cast of four or five moulds, dividing the sum amongst themselves. The result in money is said to be much the same as ordinary time wages.

Finishers.—However the work may be undertaken, the rough casting passes from the hands of the trimmer to those of the finisher. Some shops indeed do nothing but finishing (just as some establishments are only foundries), and large numbers of brass-turners, fitters and finishers are employed by railway companies, large factories, electrical and other engineering shops, or wherever the amount of machinery at work justifies the establishment of a private machine shop for repairs. Brass-finishers are thus to be found in every part of London. The trade society has issued a list of over two hundred firms in or quite near London in which men are employed as turners, fitters or finishers of brass. In the East End, near the docks, they are chiefly employed on ship's work, while in the West they are engaged on fancy and electric and chandelier

work. Large orders for hotels or public buildings are generally placed in Birmingham. The London specialty is for very fine work and for sanitary fittings.

A fully competent finisher should be able to turn his work on the lathe, file it up, and then burnish, polish or lacquer it, whatever the metal employed may be; but the tendency at present is for separate men to be employed for each operation, and lacquering is almost entirely a woman's industry.

Brass-finishers are employed upon heavy hydraulic and sanitary fittings, and even upon steamship propellers, as well as upon the fine work needed in electrical shops. There seems indeed to be a complete scale from clock-makers to dial and index-makers, on to mathematical instrument-makers and the finishers of small brass work, and so by imperceptible degrees to the workers on the heavier class of goods, of which finally a single piece may weigh several tons. The difference at the extremes is clearly marked, but between the various shades it is difficult to distinguish, and men will shift from shop to shop and call themselves finishers or instrument-makers according to the job they have in view. As a matter of fact, men accustomed to large work never like to be put on small and are generally incapable of doing it, while a small brass-finisher, though he can and sometimes does undertake larger work, is generally too fine a worker to be able to make good money at it.

It is a piece-work trade with a time rating, *i.e.* the men are rated at so much an hour and allowed to earn from one-fourth to one-half as much again on piece-work. During the job they may draw at their time rates, and sometimes rather more, and at the end they have a plus to their credit, or it may be a minus to make up. It is objected that masters do not dislike allowing their men to overdraw, as they thus obtain a hold on their services. Such an easy-going system is, without doubt, bad for the men, and it is hardly likely that the masters can really gain anything from it.

The trade union will not accept anyone earning less than 8*d* per hour, and very few men, whether in or outside the society, are said to earn less than this amount. A few make 1*s* 2*d* per hour on time-work, but 8½*d* to 9*d* would more nearly measure the average man. On piece-work 52*s* and 44*s* are given as the earnings of a good and an average man respectively, working about fifty-two hours per week, and it is said that the men could earn more if the masters did not object to their making more than 1*s* per hour.

In every shop machines and methods of work differ, and there is besides a constant demand for new classes of work, the prices for which are settled by a conference between masters and men. So that there is no piece-work price list common to the trade, and the determination of new prices causes much waste of time and annoyance to both parties. Nevertheless, individually the men still prefer to be piece-workers, and there is no immediate prospect of relations between master and man being simplified by the introduction of time-wages.

One working man, a brass-finisher, connected with ship-work in the East End, made the following amounts in the four quarters of the year beginning March, 1893, and ending February, 1894. He was a time worker, and in addition to the usual rate was allowed something extra for work done at a distance from the factory :—

First quarter ...	642¼	hours.	Earnings...	...	£23	17	8
Second quarter...	683½	,,	,, ...	...	26	1	11
Third quarter ...	659¼	,,	,, ...	...	23	15	3
Fourth quarter...	645	,,	,, ...	...	23	18	8
	2630				£97	13	6

which gives an average of 50½ hours per week, at very nearly 9*d* per hour. In the first quarter the full week's work varied from 27 to 60¼ hours, from 33 to 64¾ in the second, from 18½ (Christmas week) to 60 in the third, and

from 42 to 53 in the fourth, showing how wide the variations between different weeks may be even though the total number of hours worked and wages earned in a quarter are very similar.

In the casting and finishing of brass, work is fairly regular the year round, and depends more on the general trade of the country than on any marked seasons.

There is no longer any system of apprenticeship. The general rule is for a boy to come in to learn core-making, and then to leave and seek a place as an improver in some other shop, where he will work on at the core bench until he can get a place as a moulder at the trough, or as fireman. Firemen never become moulders, and if a boy elect to be a fireman he can never hope to arrive at the more skilled and more lucrative position of a moulder. The United Brass Founders' Society, which admits firemen, trimmers and core-makers as well as moulders, try to enforce 38*s* a week, or fully 8*d* an hour for moulders, but are ready to admit 6*d* an hour for the other grades. The brass-finishers have their own society.

Brass Workers.—In addition to brass-finishers, there are brass workers, who give the required form to sheet or drawn metal, whereas finishers' work is put upon objects to which the form has already been given in casting. They are mainly engaged upon the lighter branches of the trade, such as mediæval and art metal work, by which is meant the manufacture of church altar ornaments and crosses, and artistic electroliers, &c., for which the demand is still increasing. The better workers in this section approach closely to the workers in gold and silver, but the texture of the baser metals is so different that it is not often that a brass worker will be given work on the precious metals.

Some brass workers are paid by time, others by piece, and the plan of piece-work based on a rate per hour is also in force in some places. In other shops there are piece masters who take the orders over at a given price, and

employ time workers to carry them out. Leading hands and exceptionally good workmen earn as much as 10*d* and 1*s*, and even more, per hour. Fairly skilled men will make 9*d*, but the majority perhaps not more than 8*d* to 8½*d*. The trade society, again, recognizes the rate of 8*d* as a minimum. The hours of the full working week vary between fifty and fifty-four hours, and work generally begins at 8 A.M. The union recognizes fifty-four hours as a maximum.

With these men may be mentioned the saw piercers, who cut patterns and scrolls from the sheet brass which are afterwards hammered into shape by the brass worker. It is light work, done with a fret saw, and is being taken over by women, who at present can earn at it more than the usual women's wages, making from 20*s* to 24*s* per week.

The winter months are the busiest for gas, electric and chandelier work, while the mediæval workers have rather more to do before the great Church festivals. Summer time is slack, and then a great many men are to be found out of work; one man said that work was so very uncertain for the six summer months that though a skilled man himself he could not be sure of three days' full work in any one week.

Polishers, Burnishers and Lacquerers.—A higher polish, or a permanent gloss, or a different colour, is generally given to all work leaving the hands of the brass worker or brass-finisher, and for this purpose it is handed over to the polishers, burnishers, or lacquerers. The polishers are without organization, and form perhaps the poorest section of the trade. The lime and sand used on the revolving wheels and leather "bubs" (for small corners) fly off and fill the throat and eyes, and make this work somewhat unhealthy. It is also dirty work, and disliked by the men. The very best brass polishers make as much as 8*d* per hour, but the ordinary men only 6*d*.

Burnishers give a close grain to the surface of brass work with a smooth steel tool; they are also expected to be able

to dip and bronze their work, *i.e.* to soak it in different chemicals, so as to give it a darker colour.

They earn from 8*d* to 10*d* per hour, depending on the class of work which they are capable of doing.

Lacquerers in the brass trade are nearly always women; they have a light touch, which men cannot rival. It is hot work, but not very fatiguing. The women sit at heated iron tables, on which their work is laid; they paint polished brass goods with a solution, and then hold them over a Bunsen burner, which further liquifies the lacquer and allows it to flow more evenly. On day-work they earn from 15*s* to 25*s* per week.

Coppersmiths and Braziers.

Apart from the casting and finishing, cutting and hammering, polishing and lacquering of brass or bronze, there is the regular work of the coppersmith and brazier, of whom the census recognizes 933 individuals. These men are employed chiefly upon marine repair work, or distillery work, or in railway shops, or by general engineering firms.

Marine work absorbs the greater number, and the work is naturally to be found in the neighbourhood of the docks. Here, as in all work in which ships' repairs form the staple industry, great irregularity is noticeable. The men shift freely from firm to firm, and anyone will leave a job which he thinks may only last a fortnight for one which will last a month. Very often no notice is given or required, and all that a man need do is to ask for his money at the end of a day and then go. Little is, or seemingly can be, made for stock, so that there is no means of bridging over the gulf between one job and another. But perhaps work for the men may not be quite so irregular as might be thought, for one firm is often busy while another is slack. It is rather the uncertainty

of work which is trying, and is no doubt the chief cause of the complaints as to the habits of men employed in this branch.

Brewers and distillers' work is also irregular, that is, it comes in bursts; but notice can always be given beforehand, so that both men and masters are prepared. Brewers generally have their repairs done in the winter, when they can best afford to suspend brewing operations.

In the railway shops work is very regular.

Coppersmiths are nearly all time workers, though in breweries and distilleries some work on coppers, stills and hop-backs is by force of custom done on piece; in railway works, engineering, and marine shops, all men are on time. The full week consists of fifty-four hours; 6*s* per day is stated as the average money made by coppersmiths.

Below are given the earnings of three men, with the number of weeks they found employment with one firm—a marine repair shop—in the year 1893-94. It should, perhaps, be noted that very few men in this branch expect to find work in one house throughout the year, and one of these is an exception in this respect. The other two were probably employed elsewhere as well, and these totals do not therefore represent their yearly income.

The full working hours of these men were 9½ for 5 days, and 6½ on Saturdays, making a week of 54 hours. They were expected to begin at 6 in the morning; 1½ hours were allowed for meal-times, and overtime at the union rate—time and a quarter the first 2 hours, and time and a half afterwards—did not begin until 9½ hours had been worked.

Of the three, A was said to be the best workman, but all three were steady men.

A	first quarter (April to June)	...	644¾ hours	... Earnings	£25	7	6
	second ,, (July to Sept.)	...	754¾ ,,	... ,,	30	0	1
	third ,, (Oct. to Dec.)	...	598½ ,,	... ,,	23	10	7
	fourth ,, (Jan. to March)	...	734 ,,	... ,,	28	9	5
			2732		107	7	7

B	first quarter, 11 weeks	...	519 hours	...	Earnings £19 5 10
	second ,, 8 ,,	...	380½ ,,	...	,, 14 1 9
	third ,, *nil.*	...	*nil.*	...	*nil.*
	fourth ,, 4 ,,	...	215 ,,	...	,, 7 19 2
			1114½		41 6 9

C	first quarter, 13 weeks	...	560 hours	...	Earnings £20 0 11
	second ,, 5 ,,	...	215½ ,,	...	,, 7 16 7
	third ,, 2 ,,	...	67¼ ,,	...	,, 2 7 4
	fourth ,, 12 ,,	...	582¼ ,,	...	,, 20 0 10
			1425		50 5 8

A worked for 52 weeks and averaged 52½ hrs. per week at 9*d* per hour.
B ,, ,, 23 ,, ,, 48½ ,, ,, ,, 9*d* ,,
C ,, ,, 32 ,, ,, 44½ ,, ,, ,, 8½*d* ,,

A's hours varied from 19½ in the first quarter (being in Easter week) to 74. In the second and fourth quarters work was more continually heavy, and in 13 weeks out of the 26 overtime was found necessary. With the other two men short time is more usual than overtime.

Braziers do a lighter and finer class of work than coppersmiths, and make such things as tea-kettles and kitchenware, also the long chaldrons used for feather-dying, and the copper bowls for sugar melters. All articles which are made in more than one piece have the different parts brazed together. Brazing is a system of soldering and then hammering, which requires some skill.

Unlike that of the coppersmith, braziery is almost entirely a piece work trade. A few are time workers and earn from 9*d* to 9½*d* per hour. They are busy both before and after Christmas, and slack in the summer until the fruit season comes round, when the jam-makers require new coppers and send old ones to be repaired.

Both coppersmiths and braziers are apprenticed for seven years to learn their trades, though five years is often considered sufficient, and legal indentures are seldom used.

Zinc Workers.

The 935 zinc workers in London consider the "Road," as the Euston Road is called, to be their trade centre. These men are employed both out of doors and indoors. Outside work consists in laying zinc and copper "flats" or roofs, and shop work in the manufacture of cowls, flues, dormers, ventilating work, &c.

Zinc, which is found chiefly in Belgium and Austria, is a metal that can be easily worked and, as it is cheaper to buy than copper or lead, and will not rust, it is much used for roofings and gutters, and any surfaces exposed to the damp.

In the trade, there are five or six large shops employing twelve to seventy men regularly throughout the year, and below them come a host of small masters who to-day may have one and to-morrow twelve in their employ. Besides the permanent staff in the large shops, there are always a number of casuals who form the shifting portion of the trade.

Work on time and piece obtains in about equal proportions. Large employers who take big orders often have their work done on piece, while in the smaller shops time-work is the rule.

When work is on piece, the master sets a price and offers it to the men, who, if they accept it, draw about day-work wages from the firm during the job, and at the end share the plus or divide the loss as the case may be. The money is paid over in a lump sum to one man and by him divided, and it is difficult therefore to estimate the difference between time and piece-work rates: but men on piece naturally expect to earn rather more than if they were on time. If there is a difficulty, or no men in a shop will accept the proffered price, then the work has to be done at day-work rates.

Wages are paid to the men at the rate of 5*s* 6*d* to 6*s* 6*d* per day, and they calculate to earn 36*s* to 40*s* a week throughout the year. Some houses pay by the hour at 8*d*, 9*d*, and 10*d* for special shop work, but day-work is the most

usual form of employment. In the outskirts of London the rate is generally 1*d* per hour less than in London itself.

The demand for zinc workers is fairly regular. In the winter, roofs leak and chimneys smoke, and repairs must be made and chimney cowls are in request. In the late summer, there is a great deal of work for new houses, and gutters, dormer-windows, and baths are wanted.

As much of the work is done at a distance from the factory, the men are generally paid for the time they take in going to a job, unless the foreman knows that they live near the work, when nothing is allowed. If they are sent to the country, travelling expenses and ordinary day-work rates are given, and 1*s* per day for lodging-money.

There is no regular system of training. A few lads and boys are apprenticed for various terms (always ending when they are twenty-one). This is usually in the smaller shops, where they can learn every branch of the work. But the more general rule is for boys to go with the men to their work, carrying the tools and helping where they can. In this way they pick up their duties by degrees, and finally demand full wages. The trade society has recognized that this want of method is unsatisfactory, and with great spirit has started a class for zinc workers, which is open not only to members of the union, but to those outside also.

Lead Workers.

By these is meant workers in "blue," as contrasted with those engaged in the manufacture of "white" lead.

Lead-pipe, sheet-lead, lead-capsules, shot and bullets are the principal forms into which blue-lead is manufactured in London. Lead comes chiefly from the Broken Hill mines in Australia, and from Spain, and is brought over as ship's ballast, a great deal being carried by the vessels whose apparent cargo consists of oranges.

Lead-pipe is formed by running molten lead into hydraulic presses and then forcing it out round a central core which

corresponds to the internal diameter of the pipe. Sheet-lead is first cast in a flat mould and then passed through rollers; shot-lead is mixed with arsenic and run into ingots, and then taken to the top of a shot-tower and there re-melted and allowed to fall through the air into a tub at the bottom, and then is sifted and coloured. Bullets are generally cast in moulds. In lead-capsule making there are a great many (certainly more than five hundred) women and girls who are not counted under this trade in the census. They are piece workers, and are principally engaged in rolling, stamping and colouring the capsules made to put over the corks of wine and spirit bottles. Girls at this work earn from 7*s* to 12*s*, and forewomen 16*s*.

Lead-working cannot be called skilled work; the men are nearly all piece workers and earn little over labourers' wages. Leading hands can earn as much as 35*s*, and ordinary men between 24*s* and 28*s*. Some, too, are second-class labourers and make under 20*s*.

There is nothing very unhealthy in blue-lead working, provided that a man is not predisposed to lead poisoning; but most men in lead factories have very white faces. Tall men are said to be more readily influenced than short, but the chief cause of trouble is insufficient care in washing before food. In London a great deal of old pipe lead is remelted, and the fumes which escape are noxious.

There is no trade organization in this industry.

White Metal, &c.

Metal Refiners and Burnishers (1811 persons) should perhaps more properly be numbered with the first section dealing with brass and bronze. They include the art metal workers, polishers, bronzers and saw piercers, who have been mentioned above.

White-metal and Plated-ware Workers (827 persons) include the *Pewterers*, a small but prosperous body of London mechanics. There are three main branches of work in

metal known as pewter, which is an amalgam of tin and lead hardened with copper or zinc, and to all three a pewterer should be able to turn his hand.

These are—1. Sad-ware making.
2. Bar-fitting.
3. Pewter-pot making.

Birmingham and Sheffield supply the greater part of the "sad ware" in use, which consists of teapots, ice-moulds, hot-water dishes, &c., but for bar-fitting and pewter-pot making London is the trade centre. The two latter branches are generally carried on under the same roof, and a large shop will also employ a brass-finisher and a carpenter in addition, and even in small shops there is generally a brass-finisher. As a rule, pewter pots are made on piece, while bar-fitting, without exception, is day-work.

The moulds in which the casts are made are of gun-metal, and must be properly heated before the molten pewter can be poured so as to produce a successful result. As soon as the castings are cool they are taken to the lathe, and after this the pieces are "garnished," *i.e.* very finely soldered together.

Bar-fittings and beer-engines are all made out of sheet-metal which has been machine-rolled, and is then worked up to shape by hand. Most of this is out-door work, as the fittings have to be fixed in the public-houses themselves.

In the trade some houses consider that fifty-four and others that fifty-eight hours constitute a full week's work. Full pay for good men is 42*s*, and an average man would make from 38*s* to 40*s*; very few earn less than this.

On piece-work, which implies rather a greater exertion on the part of the man, 1*s* per hour would be the minimum earned. The trade society has a price list, and all men work to it. The largest house in the trade employs under twenty men, and there are besides several very small employers with one or two journeymen under them, but in both the smaller and the larger shops the same rates of pay obtain. Trade is busiest before all the public holidays, and

especially before Christmas, when publicans are anxious to have all in order for their own busy time, and slackest in January and February, when the men are generally put upon short time, and the work shared between them.

There is very little shifting either from branch to branch or to outside trades, and although a man is supposed when out of his time to be able to turn to any part, he is generally rather better at one branch, and therefore kept to it by his master.

Apprenticeship for seven years, with legal indentures, is still enforced, and it is said that not two men can be found in London who have not served their time.

Tin Plate, &c.

The census gives 4562 persons who find employment in tin and iron-plate and tin-canister making.

Tin and Iron-plate Workers are those who deal with sheet-iron or tin-plate which, as has been said, is merely sheet-iron coated with tin. A great deal of tin-plate is worked up in London, though Birmingham and Wolverhampton are the real centres of the trade. Tin-plate comes from Wales, packed in flat wooden boxes ready for immediate use by the workman.

In London the trade has two divisions, the West End trade and the East End trade. The names have no reference to the localities in which the chief shops are to be found, for there are "West" End shops in the far East, and *vice versâ;* and the distinction is solely due to the class of work undertaken. The "West" End shop does heavier and more costly work than his "East" End neighbour.

The *West End* trade may be further sub-divided into (1) shipping, (2) general branches. Those who work on ships live naturally near the docks; they are expected to be able to do any tin or iron-plate work, *e.g.* ships' lamps and ventilators, which may be required on board a vessel. They are generally day workers, at from 8*d* to

$9\frac{1}{2}d$ per hour. They work from 6 A.M. to 5 P.M. on all days except Saturdays, when they leave work at 12, and their full week is one of fifty-four hours.

"Shipping" is the most irregular branch of the trade as regards continuity of employment. Two or three days hard work may be followed by two or three weeks enforced idleness, or *vice versâ*, and overtime is a necessity, for repairs are generally made at high pressure. Some, indeed, like the alternating extremes, and the constant change from one job to another; they take up this branch while they are young and unmarried, but, as a rule, relapse into the general trade as they become older and more settled.

The general trade—which comprises the manufacture of such things as baths, coal-scuttles, dust-pans, Scarborough trunks, churns, all kinds of kitchen utensils, milk-cans, water-pots, &c., affords more regular work. Here nearly all is piece-work, and the price list of the trade society is closely followed. Each man takes out his own work and is himself paid for it; this is the rule of the trade, and there are very few instances of jobs being given out to two or more men working together for a lump sum. There is but little shifting from shop to shop, and in slack times the work is usually shared. Tools in different shops are often slightly different, so that a man who can earn very good money in one will find himself a slow worker in another, and there is besides an unwillingness to change caused by the system of giving to those who have been in one place a long time rather better paid work than to new comers. The society price list has as yet taken no notice of the new fashions and new methods introduced in the last twenty years, the consequence being that on some work a man can hardly make 20*s*, whereas on more highly-priced work he will "shell peas," as he says, and earn 48*s* and 50*s* easily. Thus a young man once in a shop has a strong inducement to stay there, but, on the other hand, there is also great temptation to seek good work elsewhere at something under

the society's price list. This difficulty has now been realized, and will probably lead to a complete revision of the price list.

In small shops day-work is sometimes in force, but there is no regular rate, and anything from 7*d* upwards per hour is paid. Good men will get as much as 10*d*, and some 1*s*, per hour, but this is exceptional. The usual rate is 8*d*.

On the fairly paid work a man is expected to earn at least 30*s* in a week, or few masters will keep him. Some employers calculate the rent of a bench at 6*s* per week, and it does not pay them to have men who cannot make good money, for good money to the man means good money to the master also.

There is no regular rule as to the hour at which men should come to work; shops vary and men vary even more: 8 A.M. to 6.30 P.M., and until 1 o'clock on Saturdays, seems to be the more general rule; but, as there is no compulsion, it depends on the men's own feelings whether they turn up at 8, 9, or at 10 in the morning. At one time they would overdrive themselves when they did come to work and take no time for meals during the day, but now the majority of masters insist on a dinner-hour from 12 to 1 o'clock.

There are no marked seasons, and work is pretty regular throughout the year. Overtime is exceptional, but short time is proverbial in the trade, especially just before and after Christmas and in the autumn.

There cannot be said to be any recognized system of apprenticeship. Employers used to be willing to let fathers teach their sons and pay them in full for all they did; in this way they would get extinguishers, oil-cans, and small saucepans made, which men are as a rule very loth to undertake. In some places, boys are still taught in this way; in others, there is a verbal agreement between masters and parents, by which the boy is bound for seven years; and again, in others, a boy is allowed to come into a shop at fifteen or sixteen and pick up what experience he can;

he is given work, and it depends on the kindness of the other men about, and on his own intelligence, whether he is able to make anything or not: in any case, a certain percentage, often one-third or half of his earnings, is stopped until he is twenty-one years of age.

In the *East End* trade, a lighter and commoner class of goods is manufactured. All work is piece-work, and there is a trade society, but hitherto they have had no price list, and different prices prevail in different shops.

"Hods" and "scoops," the two more usual forms of coal-scuttles, are in demand in winter, and water-pots in summer, and these are the staple manufactures in this branch.

A fair man on full time all the year round will make an average of 28*s* per week. But it is surprising how much capabilities differ, and the average of some men is considerably higher. Of two men working the same number of hours and on the same class of work, one was shown to have earned 30*s* while the other (an exceptional man be it said) had made 60*s*. A large number of the trade were said only to average 20*s* per week the year round, and many fair workmen do not make as much as ordinary labourers in regular work.

Below are given the actual earnings of three men over periods of 91, 155, and 182 weeks respectively in the years 1886 to 1893.

A was a quick worker, B medium, C a slow worker; they all worked on an average 53 hours in the week. Starting in June, 1890, up to December, 1891, A drew money 91 times in 91 weeks, and earned altogether £156. 13*s* 1*d*, or an average of 34*s* 5*d* per week.

B, the medium worker, starting in June, 1890, until December, 1892, drew his money 149 times in 155 weeks, earning altogether £165. 19*s* 5*d*, or an average of 21*s* 5*d*; one week of his time he was ill.

C started in June, 1886, and until September, 1889, he drew 179 times in 182 weeks, and earned altogether £143. 17*s* 5*d*, or a weekly average of 15*s* 9¾*d*.

All three men often take out more work than they actually finish in the week. They are given a certain quantity to be done for a certain price at the beginning of the week, and this is noted in their wage-books. On pay-day they bring what they have done, and its value is subtracted from the price of the whole job, leaving something still to be paid to them when their work is complete. The next week they start on this old job which they finish, and then ask for more. Perhaps they cannot get as much as they want, and borrow from the firm to supplement their earnings. If this is allowed (and it usually is) they start the following week in debt, and have to work off "dead horse" before getting anything fresh to their credit. A good deal of this "horse" is to be found in the three wage-books, and is generally more noticeable about Bank-holiday time. To show all this more clearly, the earnings of A for a quarter are given below, week by week :—

1890.	Value of new work taken out.	Value of work left unfinished.	Money earned.	Debt to firm.	Money drawn.
	£ s. d.	£ s. d.	£ s. d.		£ s. d.
April 5	2 3 7½	0 8 0	1 15 7	Repaid 6*s*	1 9 7½
,, 12	1 8 3	—	1 16 3	Borrowed 3*s*	1 19 3
,, 21	1 14 6	—	1 14 6	Borrowed 3*s*	1 17 6
,, 26	2 4 6	—	2 4 6	Repaid 6*s*	1 18 6
May 3	2 0 3	0 5 0	1 15 3	—	1 15 3
,, 12	1 9 5	—	1 14 5	Borrowed 3*s*	1 17 5
,, 19	2 2 7	0 3 0	1 19 7	Repaid 3*s*	1 16 7
,, 27	1 12 6	0 10 0	1 5 6	—	1 5 6
June 2	1 9 0	0 3 0	1 16 0	—	1 16 0
,, 9	2 7 0	0 13 0	1 17 0	—	1 17 0
,, 16	1 2 10	0 3 0	1 12 10	—	1 12 10
,, 24	2 0 0	0 3 0	2 0 0	—	2 0 0
,, 30	1 19 9	0 4 0	1 18 9	—	1 18 9

Unlike the rest of the trade, the legal apprenticeship for five, six, or seven years has survived, but there is some complaint that boys are not really taught the general work but are given, and themselves prefer to do, small work at which their immediate earnings are somewhat higher, but owing to which they still have to learn general work when they are out of their time. These it is of whom it is

said, "You can see them still eating bread and cheese for dinner (instead of meat) after they have served a full seven years' apprenticeship."

There are also, in this branch, a number of small garret masters, who engage two or three men and boys to help them. They are regularly employed by the larger firms, who in this way can get very light and common articles, such as oil-cans, beer-cans, dust-pans, &c., made for them more cheaply than they can make it themselves; and hence the large factories are merely retailers of the commoner classes of these goods. In Whitechapel, several Jews are entering the trade. There are a few men, too, who work at home with their families, and then hawk their goods in the "Lane," or about the small oil-shops in the east.

Tin-canister Makers differ from the other tin-plate workers in that in this branch a great many women are employed —probably more than are credited by the census to this section—and a great deal of machinery is used.

These goods are only required in large quantities, and are, as a rule, made only in large factories and by machinery; the small home worker finds here no opening for his patient industry.

The best class of work is required in the manufacture of provision tins—mainly an export trade. The larger provision merchants make their own tins. Work is said to be increasing in London, and with the constant introduction of new machines every process has been greatly simplified, so that each year fewer skilled men and more women and boys are demanded for it.

The majority of the workers are on piece, and only a few of the better men are on time. 6½*d* to 9½*d* per hour are the rates for day workers; 8*d* is the recognized rate in good preserving shops, though a few get more than this, and in some a system of "task day-work" is in force, when payment is made by the hour on the understanding that the output shall be up to a given amount.

Women can make 15*s* or 16*s* on piece for a full week, varying between fifty-one and fifty-six hours, and young girls about half that amount.

In a busy time the few men in good shops will get as much as 50*s*, but in slack times they are turned off at once, the work being very seldom shared.

Tinned goods are required in so many trades that the demands in different seasons balance one another. December and January are dull in trade generally, and so are dull for tin-canisters also. In the preserving trade men are busy making tins for potted meats, tongues and brawns towards the latter end of February—sausages are tinned in March and through Easter until it gets too hot. Fruit (which affects women especially) and fish follow in the autumn, and a little of everything for the general trade in winter.

There is a good deal of shifting from shop to shop; and also from London to the provinces during the fishing season. It is a common thing for a man to travel off to Lowestoft and even as far as Aberdeen, Frazerburgh and Stornoway, where he is sure of employment in soldering down fish-tins during the season; some men make a habit of going, and a single man can make it pay well, besides getting a thorough change of air.

There is not much overtime now, and the marked decrease in the last two years is said to be due to the general feeling against it rather than to any direct agitation on the part of those employed.

Besides women and men there are a great many lads under eighteen years of age. Nimbleness of fingers is required more than experience, and therefore boys and girls are preferred to older persons. In the factories they can get 10*s* or 12*s* soon after leaving school, and this is so great a temptation that many do not look beyond. Consequently lads reach manhood without any useful knowledge, and are then compelled to leave and seek other work as unskilled men. Sometimes they may get a job in another tin-plate

factory, but they are not fitted for the work, and, as a rule, must leave the trade altogether.

There is some complaint, that the machinery is insufficiently guarded, and that accidents occur more often than they should.

Wire, Lamps, &c.

The last group of persons represented in this section includes wire-weavers and drawers (1306 persons), lamp, lantern and candlestick-makers (532 persons), "other workers" (pencil-case, theatrical jewellery, dog-collar, ferule, teapot knob, &c., makers, and dirt refiners) 288 persons, and dealers (268 persons). Of these wire workers are the most important, for there are not many lamps and candlesticks now made in London, except by a few carriage lamp makers and art metal workers, and the "other workers" may be taken as belonging to those already considered in dealing with brass and bronze.

Wire-Workers were originally one and the same with the tin-plate workers, and the old name of the guild is that of the "Worshipful Company of Tin-plate workers *alias* Wire-workers." They are mentioned together probably because wire in old times was made by hammering out iron-plates and then cutting them into strips, at a time when the system of wire-drawing was not known in England; or it is possible that the connection may go back to the days of plate and chain armour. Now, wire workers are quite a distinct body. They make sieves, screens, lattices to protect windows, flower-stands and baskets, and a great many other small articles whose shapes and uses vary from day to day. In large factories sieve-making is almost a distinct branch, and one or two men will be kept on this work exclusively.

Wire Weavers, who weave wire-gauze at handlooms—very much in the same way as the Spitalfields' silkweaver, only with wire instead of silk—are also distinct, with a society

of their own; and so also are wire-rope and netting-makers. The majority are piece workers, working according to the price lists established by agreement between masters and men in the various shops. No two shops are exactly alike, either in the amount they pay or in the methods they employ for the manufacture of a given article, though for common goods in constant demand there is no great dissimilarity.

Hours vary in the same way, and as a rule fifty-five to sixty hours make up a full week's work, beginning in nearly every case at 8 A.M. As to earnings, an average piece worker can expect to make between 30*s* and 35*s*, a fast worker in a good shop as much as 40*s*, and a slow man as little as 25*s* to 30*s*.

In the factories, work is fairly regular and evenly divided among the men, and there is very little shifting from shop to shop. But besides those so employed there are a great many small masters, and the competition in small goods such as can be made without the aid of machinery is very severe.

Apprenticeship for five or seven years is still the recognized way of learning the trade, and is the rule among weavers; among wire workers the system has been broken down by the number of outside workmen; and though some boys are still apprenticed, yet more come in and pick it up as they can.

Weavers earn rather less than workers, and their money varies a good deal from week to week. On a small job there is much time spent in "warping," or setting up the loom; but if a long length is ordered, and a man gets a "fat job," he can make £2 or £3 easily, and money made easily is easily spent, especially when following on a week in which, after much hard work, very little has been gained.

Wire-rope and *netting* making is all machine-work, and except for "leading hands," unskilled. Lads and boys are employed until they ask for men's wages, when there is no demand for them and they seek work elsewhere, or go to sea.

Dirt refiners are those who receive the sweepings of foundries and finishing shops and separate by means of revolving magnets or otherwise the valuable metal from the worthless dirt.

Trades Unions.

The following trade organizations are connected with the industries described in this chapter :—

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
933	730	London and Provincial Friendly Society of Coppersmiths (1846).	365	365	Out of work, Strike, Sick and Death Benefits. 5 years' apprenticeship. Deputations to settle disputes. Minimum wage enforced. Pension if over 50 and contingent fund to help cases of distress.
5289	3831	London Braziers' Hand-in-Hand Society (1829).	60	1146	Enforces apprenticeship. Union and non-union men work together.
		London United Brass-founders' Society (1890).	228		Out of work, Strike and Death Benefits. Grants for distress. Union work with non-union men.
		Friendly Society of the London United Brassfinishers (1837)	397		Out of work, Sick, Death, and Pension. Emigration. Minimum rate. Union and non-union men work together. Relations with employers good.
		London Society of Amalgamated Brassworkers (1886).	404		Out of work, Strike, Death and Accident money. Grants to those in distress. Unionists and non-unionists work together. Relations with employers good. Minimum rate.
		National Society of Amalgamated Brassworkers (1872).	57		Has 18 branches in all parts of country with 6458 members. This is the London branch. Offers strike money only.
6222	4561	(*Carried forward*)		1511	

Numbers in the London Trade (Census 1891).		Name of Trade Society.	Membership in London.		Remarks.
Total.	Of whom are employed males over 20.		In each Society.	In each Division.	
6222	4561	(*Brought forward*)	—	1511	—
4562	2751	Amalgamated Society of Tin and Iron-plate workers and Gas-meter makers, London (1871).	800*	1230	Out of work, Strike, Death, and Petition Benefits. Subscribes to Pension Society. Relations with employers good. Price list enforced.
		East London Operative Tin and Iron-plate workers' Society (1874).	250		Out of work, Strike, Death, and Petition Benefits. Union and non-union men work together. Relations with masters good.
		London Tin Canister and Tinman's Society (1881).	100		Out of work, Strike, and Death money. Union and non-union men work together.
		Iron-plate Workers, Braziers and Forgers' Society.	80		—
935	638	London Operative Zinc-workers' Society (1853).	91	91	Out of work, Sick, Strike, Death, Emigration and Pension money. Grants to those in distress. Have started Benevolent fund and technical class for both union and non-union men. Relations with employers very good.
509	331	(*Leaden goods.*)	—		
1811	1136	(*Metal Refiner, Burnisher.*)	—		
827	522	London Pewterers' Trade Society (1842).	50	106	Out of work and Strike money. Very exclusive society. 7 years' apprenticeship enforced and price list.
		London Electro-plate Workers' Union (1872).	56		Is branch of the rich Birmingham National Society (261 members). Offers out of work and Death Benefits.
1306	622	London Society of Wire-workers (1871).	100	248	Out of work, Death and tramp money.
		London Society of Wire-weavers.	48		—
		London United Association of Wire-rope Makers and Fitters.	100		The Society still exists, but the numbers here given are those for 1891.
532	331	(*Lamp, Lantern, &c.*)	—		—
288	137	(*Other Workers.*)	—		—
268	101	(*Other Dealers.*)	—		—
17,260	11,130			3186	

* Two hundred and fifty of these are gas-meter makers.

Thus out of a total of 17,260 persons connected with the trades which have been dealt with above, 11,130 are "employed" males over 20 years of age, and of these 3186, or 29 per cent., are members of a trade society.

Subscriptions vary from 4*d* per week (the Wire Workers) to 1*s* (the Brass-finishers), but 6*d* is the more general rate for all the societies mentioned.

The members of the Brass societies are allowed 10*s* out of work pay for thirteen weeks, and up to as much as an average of 8*s* per week for thirty-nine weeks in a year. Nearly twice as much is offered for strike money, and from £2 to £10, depending on length of membership, at death; with half the amount at the death of a member's wife. Distress money is generally given for special cases, but no pensions are provided except by the Brass-finishers, who offer from 4*s* to 8*s* per week after a membership of twenty to forty years. Sick money is rarely given. Among the Tin-plate Workers rather less is paid for out of work benefit, and sick members are only exempt from contributions. When on strike, married are allowed more than unmarried members by two societies, and in addition one society offers 1*s* per week for each child. Death money is about the same as among Brass Workers. They do more, however, as to pensions, and there is an amalgamated Tin and Iron-plate Workers' Pension Society, founded in 1828, with 718 members, consisting of both employers and employed. In return for an annual 5*s* members are granted 5*s* per week when incapacitated by old age or infirmity, and 2*s* 6*d* for their wives.

As a whole, the industries considered above are well organized, and in addition to their strength in London, several are federated with National Societies, and when in need can be sure of outside help. Thus, there is the "United Journeyman Brass-founders' Association of Great Britain and Ireland," founded in 1866, "to raise a fund for mutual protection in the event of disputes arising between employer

and employed." This society has thirteen branches with 2293 members, and admits all members of existing brass societies. The London Brass Workers are also federated among themselves, and embrace the Mathematical and Scientific Instrument Makers' Societies among their numbers. Then there is the National Society, which has a large membership (6458), but is almost entirely a Birmingham Association.

The Tin-plate Workers' Societies have also an outside connection, and belong to the National Amalgamated Tin-plate Workers of Great Britain, which is a purely fighting body, and only gives strike money.

None of the societies in the section attempt to enforce any regular system of apprenticeship, with the exception of the Coppersmiths, Braziers and Pewterers. The Zinc Workers, a small but progressive society, have started a technical class for themselves, open to all members of the trade, which is successful, and shows what can be done by trade societies themselves in this direction. In addition to this they have opened a benevolent fund, to which all may subscribe, to assist those in distress.

The relations of all the societies with the employers are generally friendly.

Wages Statistics.

Employed in the trades grouped in this section are 11,130 adult males. Our wages returns are from forty-three firms, and include 1402 adult males, as under :—

Brass-founders and finishers	12	= 43 firms usually employing 1881 persons, of whom 1390 are adult males, but 183 of these belong to other sections. On the other hand, other sections contribute particulars for 195 men. Making up the total of 1402 as above. Those employed in other sections include iron-moulders and trimmers, engine drivers, carpenters, bricklayers, painters, carmen, warehousemen and labourers.
Copper-smiths, &c.	7	
Lead and Lead-pipe makers	2	
Tin-plate workers and Tinsmiths	2	
Wire workers and weavers	4	
Wire-rope and cord-makers	2	
Zinc workers, &c.	8	
Metal and art-metal workers	3	
Lamp-makers	2	
Electro gilders and brass-polishers	1	

The earnings of these men in an average week are as follows:—

Below 20*s*.....	65, or $4\frac{1}{2}$ per cent.		Under 30*s*, $43\frac{1}{2}$ per cent.
20*s* to 25*s*.....	279 ,, 20 ,,		
25*s* ,, 30*s*.....	264 ,, 19 ,,		
30*s* ,, 35*s*.....	283 ,, 20 ,,		30*s* and over, $56\frac{1}{2}$ per cent.
35*s* ,, 40*s*.....	270 ,, 19 ,,		
40*s* ,, 45*s*.....	119 ,, $8\frac{1}{2}$,,		
45*s* and upwards...	122 ,, 9 ,,		
	1402 ,, 100 ,,		

These figures may be compared with returns made to the Board of Trade in 1886 from twenty-four similar firms, employing 765 persons, exact details being given for 653 persons, of whom 506 are adult males belonging to this section.

	20*s*.	20*s*—	25*s*—	30*s*—	35*s*—	40*s*—	45*s*.
Our returns ...	$4\frac{1}{2}$ %	20 %	19 %	20 %	19 %	$8\frac{1}{2}$ %	9 %
	$43\frac{1}{2}$ %			$56\frac{1}{2}$ %			
Board of Trade returns	1 %	21 %	$6\frac{1}{2}$ %	19 %	$27\frac{1}{2}$ %	19 %	6 %
	$28\frac{1}{2}$ %			$71\frac{1}{2}$ %			

Beyond the difference between actual and nominal earnings, it would seem that the Board of Trade returns are short of the men from 25*s* to 30*s*. These are probably the labourers and may be those for whom detailed particulars were omitted in the Board of Trade returns.

As to irregularity of work, our returns from 3 firms, employing about 500 men, show a decrease of 13 per cent. in the numbers employed, comparing a slack with a busy week, but no reduction in the average earned per head. The Board of Trade figures for 22 firms employing about 800 men (in 1886) show 19 per cent. reduction in numbers, and no less than 26 per cent. in the average amount actually earned, or, combined, a reduction of 40 per cent. It is probable that our returns are too favourable in this respect.

Three firms engaged in brass and copper-founding and

finishing gave full details respecting time and piece-work earnings in busy and slack weeks, and we are able to give the average concerning 402 men, representative of those working in these metals.

Men.		Busy Week.				Slack Week.			
		Men.	Wages.	Hours.	Rates.	Men.	Wages.	Hours.	Rates.
			s. d.		*d.*		*s. d.*		*d.*
Time-work	Under 5*d* per hour	62	19 2	52	4½	35	17 8	52	4
	5*d* and 6*d*	103	23 6	51½	5¼	89	23 5	51½	5½
	Over 6*d* to 8*d*	101	32 0	52½	7¾	102	29 10	51½	7
	Over 8*d*	105	38 2	50	9½	82	39 10	51	8½
		371				308			
Piece-work	Under 20*s*	1	19 0	—	—	9	16 5	—	—
	,, 25*s*	5	23 0	—	—	3	21 8	—	—
	,, 30*s*	6	26 8	—	—	6	27 4	—	—
	,, 40*s*	15	34 9	—	—	18	32 8	—	—
	40*s* and upwards...	17	48 0	—	—	15	48 8	—	—
		44				51			

When trade slackens, the men earning the highest rates in all grades are apparently the first to go, while the hours of work of those who stay are but slightly affected. There appears to be some tendency to put the men on piece-work during the slack season.

The wages of apprentices and boys range from 4*s* to 25*s*, 60 per cent. earning 10*s* or less, and 40 per cent. more than 10*s*. A few of the lads are on piece-work, and these are among the more highly paid.

The number of women and girls belonging to the section is comparatively small; those returned work almost exclusively in the light trades; nearly half are engaged in the manufacture of tin goods, and of the remainder most are polishers, burnishers, or wire weavers. Earnings vary from 5*s* to over 20*s*, the majority getting more than 10*s*. A considerable number of females are employed in making lead capsules, but do not appear in the census.

Social Condition.

Of the 11,130 adult males employed in these trades, about 7900 are counted as heads of families, and so come under social classification. If we might assume them to be represented by those as to whom we have particulars, we find 25 per cent. earning ordinarily less than 25*s* a week; but about 50 per cent. are found living in a more or less crowded condition, and all comparison between the scale of earnings indicated and the scale of social condition appears to break down.

Comparison of Earnings with Style of Life (Sundry Metal Workers).

Earnings as returned.			*Classification of Population.*			
Under 20*s*...	65,	or 4½ per cent.	3 or more in each room,	7300,	or 19½	per cent.
20*s* to 25*s*...	279	,, 20 ,,	2 to 3 ,,	11,050	,, 30	,,
25*s* ,, 30*s*...	264	,, 19 ,,	1 ,, 2 ,,	11,500	,, 31	,,
30*s* ,, 35*s*...	283	,, 20 ,,	Less than 1 ,, More than 4 rooms 4 or more persons to a servant	7300	,, 19½	,,
35*s* ,, 40*s*...	270	,, 19 ,,				
40*s* ,, 45*s*...	119	,, 8½ ,,				
45*s* and upwards	122	,, 9 ,,				
	1402	,, 100 ,,		37,150	,, 100	,,
			Families of employers ... 4500; Families of men working on own account ... 3400	7900		
				45,050		

The financial position of those earning the lower rates of pay has already been sufficiently indicated in the reports on the various branches of the trades given above, and it must be remembered that the yearly earnings of even those returned at higher rates are in many cases affected by the prevailing irregularity.

Following close on the heels of uncertainty of employ-

ment comes the curse of drink and the general complaints to which it gives rise. The character of the work tends to increase the natural thirstiness of the men. Brass-founders, especially in small or ill-ventilated shops, of which there are a number in London, perspire freely owing to the extreme heat of the furnaces, and, in addition, must inhale the heavy fumes which rise from the molten metal. Female lacquerers (of whom there is also complaint) suffer likewise from the heat. Polishers and finishers have to put up with throat irritation caused by the fine particles that fly off in the course of their work. With lead, again, there are noxious fumes, and pewterers would be more than human if they could always resist the offers of free refreshment while they are fitting up the bars in public houses.

In nearly every case is there some excuse for quenching thirst, and the tradition of a thirst which must be quenched is common to the metal trades. Of late years, however, there has been a strongly marked improvement in this respect: some of the men are now teetotalers and declare that tea is more effective than beer. The difficulties attendant on the profession of total abstinence have been removed by the spread of education, and men are no longer subjected to the ridicule and even social ostracism which were the natural consequence of such views in former days.

So many industries are comprised in this chapter that the habits of men as to living near their work vary considerably. Nearly two-thirds of the total number reside and probably work in South or East London, but even so not necessarily near the factory. Coppersmiths employed in railway shops as a rule are found living near by and are able to go home to dinner, but of the rest a large number live from two to eight miles away and must either walk or come in by train or omnibus in the morning. A cup of tea or coffee is always taken before leaving home, and

of late some employers have encouraged men to have a regular meal before starting and, to allow of this, have opened their shops half an hour later in the morning. There is, indeed, a tendency in all these trades to begin the day's work after instead of before breakfast, to the advantage of all concerned. Afternoon tea is generally taken in the factory, but, except among the tin-plate workers, who seem frequently to bring their dinner with them, or send out for it and eat it in the shop itself, the practice of feeding in the workshop is unusual. The midday dinner is generally taken in a coffee-shop or public-house.

In the matter of dress, aprons of linen, of sailcloth or of leather, are worn by all except founders, who find the furnace fire too dangerous to admit of anything in the shape of loose clothing.

In all the larger shops there are sick clubs, to which the men subscribe about 3*d* per week, and in return are allowed 10*s* for six weeks, followed by 5*s* for another six weeks while ill. It is the general custom that all fines exacted for unpunctuality, breach of rules, &c., should be placed to the club's credit, and the employers also contribute to the funds. At the end of a year the balance in hand is divided equally after deducting a small sum, perhaps 1*s* per member, with which to start the New Year. In other shops, provision for sickness is made by subscriptions for hospital tickets, by which not only the men but their families also are allowed to profit.

Throughout these industries there are more men who are members of friendly than of trade societies, while members of the latter generally belong to some benefit club as well, the favourites being the Oddfellows, Foresters, and Hearts of Oak. In this way sums varying from 6*d* to 2*s* 6*d* per week are invested by the provident who have the means to do so, while those less prudent or less fortunately situated, rely on the kind offices of friends and the proceeds of a

smoking concert instituted in their favour to tide them over any periods of peculiar trouble or want.

In no case is it recognized as the usual habit of wives to work for money. "We find that where the wife works, the husband usually gets careless," is the verdict of one trade society. But, notwithstanding, there are a fair number of instances where the wives of men employed do assist by washing, ironing, machine work, or charing, and this is especially noticeable in those branches of the trade in which there is the least certainty of regular employment for the husband. There is but little home work in which the women or children of the family can help, except among the small tin-plate and wire workers.

APPENDIX.

PART I.—BUILDING TRADES.

Table A.—*Distribution of whole Population.*

Registration Districts.	(1.) Architects, Engineers, &c.		(2.) Builders.		(3.) Masons.		(4.) Bricklayers.		(5.) Carpenters and Joiners.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Poplar	228	1·2	703	1·9	566	2·4	2433	3·6	4503	3·9
Mile End Old Town and Stepney	100	·5	777	2·1	481	2·1	2098	3·1	3462	3·0
St. George's-in-the-East and Whitechapel	37	·2	322	·8	101	·5	904	1·3	1089	·9
Bethnal Green	15	·1	437	1·2	616	2·7	1875	2·8	2256	2·0
Shoreditch	55	·3	474	1·4	853	3·7	1663	2·4	3087	2·7
Total of East London	435	2·3	2713	7·4	2617	11·4	8973	13·2	14,397	12·5
Hackney	889	4·6	2314	6·5	1011	4·4	3443	5·1	6142	5·3
Islington	1222	6·3	3060	8·5	1303	5·6	5716	8·4	9707	8·4
St. Pancras	1088	5·8	1911	5·3	1258	5·5	3500	5·2	6553	5·7
Marylebone and Hampstead	1741	9·0	2486	6·9	636	2·8	3109	4·6	4348	3·7
Total of North London	4940	25·7	9771	27·2	4208	18·3	15,768	23·3	26,750	23·1
Paddington	639	3·3	1230	3·4	380	1·7	918	1·3	3347	2·9
St. George's, Hanover Square	607	3·1	948	2·6	929	4·1	1028	1·5	2495	2·2
Kensington	1671	8·8	1434	3·9	792	3·4	2417	3·6	3377	3·0
Chelsea	288	1·5	1038	2·9	938	4·1	1926	2·8	3849	3·3
Fulham	1427	7·4	2683	7·4	1902	8·3	4868	7·2	8387	7·3
Total of West London	4632	24·1	7333	20·2	4941	21·6	11,157	16·4	21,455	18·7
City	36	·2	120	·3	11	—	149	·2	436	·4
Holborn	206	1·1	862	2·4	619	2·7	1967	2·9	3501	3·0
Strand, Westminster, and St. Giles	407	2·1	458	1·3	155	·7	586	·8	1431	1·2
Total of Central London	649	3·4	1440	4·0	785	3·4	2702	3·9	5368	4·6
Woolwich	290	1·5	744	2·1	195	·8	1587	2·3	2995	2·6
Greenwich	840	4·4	1159	3·2	760	3·2	2881	4·2	4848	4·2
St. Olave, Southwark	122	·6	619	1·7	347	1·5	1977	2·9	2748	2·5
Camberwell	1266	6·5	2266	6·3	1644	7·1	4583	6·9	8203	7·1
Lewisham	1031	5·4	1053	2·9	319	1·6	1703	2·5	2647	2·3
Total of South-East London	3549	18·4	5841	16·2	3265	14·2	12,731	18·8	21,441	18·7
St. Saviour, Southwark	331	1·7	1159	3·9	1385	6·0	3918	5·9	5267	4·5
Lambeth	1613	8·4	3275	9·1	2844	12·3	4853	7·2	8448	7·3
Wandsworth	3097	16·0	4281	12·0	2951	12·8	7594	11·3	12,395	10·6
Total of South-West London	5041	26·1	8715	25·0	7180	31·1	16,365	24·4	26,110	22·4
Grand Total of London	19,246	100	35,813	100	22,996	100	67,696	100	115,521	100

PART I.—BUILDING TRADES (*continued*).

Table A.—*Distribution of whole Population* (*continued*).

(6.) Plasterers and Paperhangers.		(7.) Painters and Glaziers.		(8.) Plumbers.		(9.) Locksmiths and Gasfitters.		Total of Building Trades.		Registration Districts.
No.	%	No.	%	No.	%	No.	%	No.	%	
439	1·7	3588	3·4	758	3·1	439	2·7	13,657	3·1	Poplar.
449	1·8	2945	2·8	637	2·6	349	2·1	11,298	2·6	Mile End Old Town and Stepney.
137	·6	1299	1·1	132	·6	222	1·4	4243	·9	St. George's-in-the-East Whitechapel.
476	1·9	2125	2·1	370	1·5	384	2·4	8554	1·9	Bethnal Green.
623	2·5	2626	2·5	629	2·6	586	3·5	10,596	2·5	Shoreditch.
2124	8·5	12,583	11·9	2526	10·4	1980	12·1	48,348	11·0	Total of East London.
1243	5·0	5259	5·0	1088	4·5	693	4·1	22.082	5·2	Hackney.
2090	8·4	9126	8·6	1987	8·2	1730	10·5	35.941	8·3	Islington.
1511	6·1	7783	7·4	986	4·1	885	5·3	25,475	5·9	St. Pancras.
1291	5·2	6950	6·6	2138	8·8	923	5·6	23,622	5·4	Marylebone & Hampstead.
6135	24·7	29,118	27·6	6199	25·6	4231	25·5	107,120	24·8	Total of North London.
889	3·5	3489	3·3	693	2·9	472	2·8	12 057	2·8	Paddington.
449	1·8	2580	2·4	615	2·5	567	3·4	10,218	2·3	St. George's, Hanover Sq.
1673	6·7	5460	5·2	982	4·1	613	3·7	18,419	4·3	Kensington.
1263	5·1	4140	4·0	970	4·0	537	3·2	14,949	3·4	Chelsea.
2527	10·1	7565	7·1	1627	6·7	1073	6·5	32,059	7·5	Fulham.
6801	27·2	23.234	22·0	4887	20·2	3262	19·6	87,702	20·3	Total of West London.
49	·2	242	·2	196	·8	93	·5	1332	·3	City.
432	1·7	2927	2·7	652	2·7	767	4·7	11,933	2·7	Holborn.
193	·8	1749	1·6	369	1·5	422	2·5	5770	1·3	Strand, Westminster, and St. Giles.
674	2·7	4918	4·5	1217	5·0	1282	7·7	19.035	4·3	Total of Central London.
257	1·0	1626	1·5	496	2·1	198	1·4	8388	1·9	Woolwich.
843	3·4	3117	2·9	972	4·0	595	3·6	16,015	3·7	Greenwich.
237	·9	2045	1·9	453	1·9	296	1·8	8844	2·1	St. Olave, Southwark.
1835	7·3	6419	6·0	1570	6·5	1161	7·1	28,947	6·7	Camberwell.
733	2·9	2245	2·2	789	3·3	232	1·3	10,752	2·5	Lewisham.
3905	15·5	15,454	14·5	4280	17·[illegible]	2482	15·2	72,946	16·9	Total of South-East London.
982	3·9	4514	4·3	982	4·1	851	5·2	19,389	4·5	St Saviour, Southwark.
1541	6·2	6662	6·3	1756	7·3	1180	7·2	32,172	7·5	Lambeth.
2826	11·2	9475	8·9	2351	9·6	1223	7·5	46,193	10·7	Wandsworth.
5349	21·4	20.651	19·5	5089	21·0	3254	19·9	97.754	22·7	Total of South-West London.
24,988	100	105,956	100	24.198	100	16.491	100	432,905	100	Grand Total of London.

TABLE B.—*Classification*

	Classification.	(1.) Architects, Engineers, &c.		(2.) Builders.		(3.) Masons.		(4.) Bricklayers.	
		No.	%	No.	%	No.	%	No.	%
Without Servants.	Families averaging—								
	1. 4 or more persons to a room	87	·5	1269	3·5	1478	6·4	6845	10·1
	2. 3 and under 4 persons to a room ..	162	·8	1686	4·7	2652	11·5	9212	13·6
	3. 2 and under 3 persons to a room...	526	2·7	3900	10·9	6383	27·8	20,264	30·0
		775	4·0	6855	19·3	10,513	45·7	36,321	53·7
	4. 1 and under 2 persons to a room...	1453	7·6	4718	13·2	5847	25·4	17,164	25·4
	5. Less than 1 person to a room.....	583	3·0	844	2·4	682	3·0	1742	2·6
	6. All families occupying more than 4 rooms (mainly householders) ...	4145	21·5	15,704	43·8	5415	23·5	12,054	17·7
With Servants.*	Families averaging—								
	A 4 or more persons to a servant ...	3364	17·5	4073	11·4	307	1·4	242	·4
		8092	42·0	20,621	57·6	6404	27·9	14,038	20·7
	B 1 to 3 persons to a servant, &c. ...	2916	15·2	1657	4·6	91	·4	79	·1
	C 1 to 3 persons to 2 servants, &c....	1469	7·6	362	1·0	31	·1	3	—
	D 3 or 4 persons to 3 servants, &c....	587	3·0	52	·2	4	—	—	—
		2056	10·6	414	1·2	35	·1	3	—
	E 1 or 2 persons to 3 servants, &c....	322	1·7	19	·1	—	—	4	—
	F 1 or 2 persons to 4 servants, &c....	117	·7	12	—	—	—	—	—
	G 1 or 2 persons to 5 servants, &c....	21	·1	5	—	—	—	2	—
	H 1 or 2 persons to 6 servants, &c....	33	·1	2	—	—	—	—	—
		493	2·6	38	·1	—	—	6	—
	Servants	3461	18·0	1510	4·2	106	·5	85	·1
	GRAND TOTAL.....	19,246	100	35,813	100	22,996	100	67,696	100

* *The subjoined table shows in full detail the manner in*

Class.	Families with		
	1 Servant.	2 Servants.	3 Servants.
A	4 or more persons	—	—
B	1, 2, or 3 persons	4 or more persons	—
C	—	1, 2, or 3 persons	5 or more persons
D	—	—	3 or 4 persons
E	—	—	1 or 2 persons
F	—	—	—
		(and all other cases in which there are	
G	—	—	—
H	—	—	—
		(and all other cases in which there are	

of Whole Population.

(5.) Carpenters and Joiners.		(6.) Plasterers and Paperhangers.		(7.) Painters and Glaziers.		(8.) Plumbers.		(9.) Locksmiths and Gasfitters.		Total of Building Trades.		
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
3606	*3·1*	1937	*7·6*	8824	*8.3*	999	*4·5*	718	*4·3*	25,763	*5·9*	Without Servants 404,570, or 86,885 Families = *4·65* persons per Family.
7596	*6·6*	3379	*13·7*	13,220	*12·5*	1896	*7·5*	1434	*8·7*	41,237	*9·5*	
25,151	*21·8*	7367	*29·5*	29,672	*28·0*	5309	*21·9*	4372	*26·6*	102,944	*23·8*	
36,353	31·5	12,683	50·8	51,716	48·8	8204	33·9	6524	39·6	169,944	39·2	
35,308	30·6	6322	25·3	27,360	25·8	6852	28·3	4655	28·2	109,679	25·4	
4872	*4·6*	608	*2·4*	2984	*2·8*	911	*3·8*	567	*3·3*	13,793	*3·2*	
35,742	*30·6*	5114	*20·4*	21,506	*20·1*	7312	*30·2*	4162	*25·4*	111,154	*25·7*	
2084	*1·8*	169	·7	1444	*1·6*	660	*2·7*	339	*2·1*	12,682	*2·9*	With Servants 21,865, or 4277 Families = *5·11* persons per Family.
42,698	37·0	5891	23·5	25,934	24·5	8883	36·7	5068	30·8	137,629	31·8	
524	·4	35	·2	412	·4	114	·5	105	·6	5933	1·4	
61	—	11	—	80	·1	3	—	25	*·1*	2045	*·5*	
4	—	—	—	13	—	—	—	—	—	660	*·1*	
65	—	11	—	93	·1	3	—	25	·1	2705	·6	
1	—	—	—	2	—	—	—	1	—	349	*·1*	
4	—	—	—	—	—	—	—	—	—	133	—	
—	—	—	—	—	—	—	—	—	—	28	—	
—	—	—	—	—	—	—	—	—	—	35	—	
5	—	—	—	2	—	—	—	1	—	545	·1	426,435
568	*·5*	46	*·2*	439	*·4*	142	*·6*	113	*·7*	6470	*1·5*	6,470
115,521	100	24,988	100	105,956	100	24,198	100	16,491	100	432,905	100	432,905

which all servant-keeping families have been classified:—

Families with			
4 Servants.	5 Servants.	6 Servants.	7 Servants.
—	—	—	—
—	—	—	—
7 or more persons	—	—	—
5 or 6 persons	7 or more persons	—	—
3 or 4 persons	5 or 6 persons	8 or more persons	—
1 or 2 persons	3 or 4 persons	5 or 6 persons	6 or 7 persons
fewer servants, than numbers of family)			
—	1 or 2 persons	3 or 4 persons	4 or 5 persons
—	—	1 or 2 persons	—
more servants, than members of family)			

PART II.—WOOD WORKERS.

TABLE A.—*Distribution of whole Population.*

Registration Districts.	(10.) Cabinet-makers, &c.		(11.) Carriage-builders.		(12.) Coopers, &c.		(13.) Shipwrights (Wood).		Total Wood Workers.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Poplar	3773	2·7	573	2·0	1367	11·0	2758	33·3	8471	4·5
Mile End Old Town and Stepney	4978	3·6	655	2·2	1901	15·3	1543	18·6	9077	4·8
St. George's-in-the-East and Whitechapel	3644	2·7	199	·6	494	4·0	138	1·7	4475	2·4
Bethnal Green	20,729	14·9	575	1·9	642	5·2	70	·8	22,016	11·7
Shoreditch	16,617	12·0	622	2·1	330	2·6	13	·2	17,582	9·3
Total of East London	49,741	35·9	2624	8·8	4734	38·1	4522	54·6	61,621	32·7
Hackney	10.419	7·5	1289	4·5	568	4·6	96	1·0	12,372	6·5
Islington	10,149	7·4	2631	9·2	331	2·6	39	·4	13.200	7·0
St. Pancras	13,230	9·5	2520	8·7	141	1·0	19	·2	15.910	8·5
Marylebone and Hampstead	5129	3·7	1742	6·0	105	·9	12	·2	6988	3·7
Total of North London	38,927	28·1	8232	28·4	1145	9·1	166	1·8	48,470	25·7
Paddington	2191	1·6	1436	4·9	17	·1	13	·2	3657	1·9
St. George's, Hanover Square	1938	1·4	899	3·1	96	·8	19	·2	2952	1·6
Kensington	2478	1·8	1003	3·5	105	·9	13	·2	3599	1·9
Chelsea	2151	1·5	902	3·1	56	·4	16	·2	3125	1·7
Fulham	3589	2·6	1545	5·3	263	2·1	78	·9	5475	2·9
Total of West London	12,347	8·9	5785	19·9	537	4·3	139	1·7	18,808	10·[illegible]
City	381	·2	20	—	14	·1	2	—	417	·2
Holborn	6596	4·8	894	3·1	286	2·3	4	·1	7780	4·1
Strand, Westminster and St. Giles	2338	1·8	726	2·5	130	1·1	7	·1	3201	1·7
Total of Central London	9315	6·8	1640	5·6	430	3·5	13	·2	11,398	6·0
Woolwich	1331	·9	853	2·9	209	1·6	481	5·8	2874	1·5
Greenwich	2203	1·6	714	2·5	828	6·8	1020	12·3	4765	2·6
St. Olave, Southwark	2048	1·5	652	2·3	1716	13·8	1018	12·3	5434	2·9
Camberwell	5348	3·8	1187	4·1	716	5·7	54	·6	7305	3·9
Lewisham	948	·6	378	1·3	109	·9	41	·5	1476	·7
Total of S.-East London	11,878	8·4	3784	13·1	3578	28·8	2614	31·5	21,854	11·6
St. Saviour, Southwark	6215	4·5	1544	5·3	842	6·8	117	1·4	8718	4·6
Lambeth	5334	3·8	2491	8·6	588	4·7	199	2·4	8612	4·6
Wandsworth	4936	3·6	3002	10·3	591	4·7	527	6·4	9056	4·8
Total of S.-West London	16,485	11·9	7037	24·2	2021	16·2	843	10·2	26,386	14·[illegible]
GRAND TOTAL OF LONDON	138,693	100	29,102	100	12,445	100	8297	100	188.537	100

TABLE B.—*Classification of whole Population.*

Classification.	(10.) Cabinet-makers, &c.		(11.) Carriage-builders.		(12.) Coopers, &c.		(13.) Shipwrights (Wood).		Total Wood Workers.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Without Servants. Families averaging—										
1. 4 or more persons to a room	10,313	*7·4*	1252	*4·3*	472	*3·8*	134	*1·6*	12.171	*6·5*
2. 3 & under 4 persons to a room	15,758	*11·4*	2534	*8·7*	941	*7·6*	244	*2·9*	19,477	*10·4*
3. 2 & under 3 persons to a room	36,715	*26·4*	6913	*23·8*	3065	*24·5*	1457	*17·6*	48,150	*25·5*
	62,786	45·2	10,699	36·8	4478	35·9	1835	22·1	79,798	42·4
4. 1 & under 2 persons to a room	34,519	24·9	8225	28·3	3722	29·9	2832	34·2	49,298	26·1
5. Less than 1 person to a room	3642	*2·7*	1022	*3·5*	453	*3·6*	371	*4·5*	5488	*2·9*
6. All families occupying more than 4 rooms (mainly householders).....	30,452	*21·9*	7852	*27·0*	3533	*28·4*	2912	*35·1*	44,749	*23·7*
With Servants. Families averaging—										
A 4 or more persons to a servant	4028	*2·9*	684	*2·3*	144	*1·2*	217	*2·6*	5073	*2·7*
	38,122	27·5	9558	32·8	4130	33·2	3500	42·2	55,310	29·3
B 1 to 3 persons to a servant, &c.	1407	1·1	305	1·1	49	·4	61	·7	1822	1·0
C 1 to 3 persons to 2 servants, &c.....	352	·3	36	*·1*	9	*·1*	7	*·1*	404	*·3*
D 3 or 4 persons to 3 servants, &c.....	67	—	13	—	3	—	—	—	83	—
	419	·3	49	·1	12	·1	7	·1	487	·3
E 1 or 2 persons to 3 servants, &c. ...	11	—	6	—	—	—	—	—	17	—
F 1 or 2 persons to 4 servants, &c. ...	—	—	—	—	—	—	—	—	—	—
G 1 or 2 persons to 5 servants, &c. ...	—	—	3	—	—	—	—	—	3	—
H 1 or 2 persons to 6 servants, &c. ...	9	—	—	—	—	—	—	—	9	—
	20	—	9	—	—	—	—	—	29	—
Servants	1420	*1·0*	257	*·9*	54	*·5*	62	*·7*	1793	*·9*
GRAND TOTAL...	138,693	100	29,102	100	12,445	100	8297	100	188,537	100

Without servants ... 179,333, or 39,061 families = 4·59 } persons per family.
With servants ..... 7,411, or 1,426 ,, = 5·20 }

PART III.—METAL TRADES.

TABLE A.—*Distribution of whole Population.*

Registration Districts.	(14.) Engine and Machine-makers		(15.) Blacksmiths.		(16.) Other workers in Iron and Steel.		(17.) Workers in other Metals.		Total Metal Workers.	
	No.	%	No.	%	No.	%	No.	%	No.	%
Poplar	11,048	15·3	2894	7·5	3351	10·7	2307	5·1	19,600	10·4
Mile End Old Town and Stepney	3360	4·7	1759	4·5	1567	5·0	2159	4·8	8845	4·8
St. George's-in-the-East and Whitechapel	677	·9	519	1·3	406	1·3	759	1·7	2361	1·3
Bethnal Green	1065	1·4	772	2·0	1074	3·4	1617	3·6	4528	2·4
Shoreditch	1772	2·4	689	1·7	1156	3·7	2080	4·6	5697	3·0
Total of East London	17,922	24·7	6633	17·0	7554	24·1	8922	19·8	41,031	21·9
Hackney	2327	3·2	1068	2·7	1272	4·1	1904	4·2	6571	3·5
Islington	3565	4·9	2424	6·2	2442	7·8	4304	9·5	12,735	6·8
St. Pancras	1943	2·7	2129	5·5	1016	3·2	2919	6·5	8007	4·3
Marylebone and Hampstead	770	1·1	1663	4·3	646	2·0	1267	2·8	4346	2·3
Total of North London	8605	11·9	7284	18·7	5376	17·1	10,394	23·0	31,659	16·9
Paddington	575	·8	1195	3·1	307	1·0	451	1·0	2528	1·4
St.George's,HanoverSquare	789	1·1	938	2·4	560	1·8	693	1·6	2980	1·6
Kensington	537	·7	1067	2·8	459	1·5	609	1·3	2672	1·4
Chelsea	682	·9	943	2·4	359	1·1	400	·9	2384	1·3
Fulham	1839	2·5	1670	4·3	651	2·1	951	2·1	5111	2·7
Total of West London	4422	6·0	5813	15·0	2336	7·5	3104	6·9	15,675	8·4
City	151	·1	186	·5	126	·4	221	·5	684	·4
Holborn	1928	2·7	1202	3·1	1707	5·5	3906	8·7	8743	4·6
Strand, Westminster, and St. Giles	349	·6	495	1·3	500	1·6	1235	2·7	2579	1·4
Total of Central London	2428	3·4	1883	4·9	2333	7·5	5362	11·9	12,006	6·4
Woolwich	8253	11·4	2779	7·2	2759	8·8	1909	4·2	15,700	8·3
Greenwich	8507	11·8	2567	6·6	1982	6·3	2146	4·8	15,202	8·1
St. Olave, Southwark	2966	4·1	1383	3·6	983	3·2	1748	3·9	7080	3·8
Camberwell	3605	5·0	1747	4·5	1560	5·0	2513	5·6	9425	5·0
Lewisham	942	1·3	523	1·3	217	·7	308	·7	1990	1·1
Total of S.-East London	24,273	33·6	8999	23·2	7501	24·0	8624	19·2	49,397	26·3
St. Saviour's, Southwark	3996	5·5	2347	6·1	2151	6·9	3773	8·4	12,267	6·5
Lambeth	5409	7·5	2686	6·9	1861	5·9	2871	6·4	12,827	6·8
Wandsworth	5346	7·4	3183	8·2	2180	7·0	2000	4·4	12,709	6·8
Total of S.-West London	14,751	20·4	8216	21·2	6192	19·8	8644	19·2	37,803	20·1
GRAND TOTAL OF LONDON	72,401	100	38,828	100	31,292	100	45,050	100	187,571	100

TABLE B.—*Classification of whole Population.*

	Classification.	(14.) Engine and Machine-makers.		(15.) Blacksmiths.		(16.) Other workers in Iron and Steel.		(17.) Workers in other Metals.		Total Metal Workers.	
		No.	%	No.	%	No.	%	No.	%	No.	%
Without Servants.	Families averaging—										
	1. 4 or more persons to a room	1931	*2·7*	2079	*5·4*	1689	*5·3*	2815	*6·2*	8514	*4·6*
	2. 3 & under 4 persons to a room	3861	*5·3*	4041	*10·4*	2861	*9·2*	4840	*10·8*	15,603	*8·3*
	3. 2 & under 3 persons to a room	14,141	*19·5*	10,023	*25·8*	7401	*23·7*	11,578	*25·7*	43,143	*23·0*
		19,933	27·5	16,143	41·6	11,951	38·2	19,233	42·7	67,260	35·9
	4. 1 & under 2 persons to a room	20,982	28·9	11,442	29·5	8490	27·1	12,026	26·7	52,940	28·2
	5. Less than 1 person to a room	3377	*4·7*	1343	*3·5*	1018	*3·3*	1285	*2·8*	7023	*3·8*
	6. All families occupying more than 4 rooms (mainly house-holders)	24,060	*33·4*	9143	*23·5*	7870	*25·1*	10,118	*22·5*	51,191	*27·3*
With Servants.	Families averaging—										
	A 4 or more persons to a servant	2019	*2·8*	495	*1·3*	919	*3·0*	1093	*2·4*	4526	*2·4*
		29,456	40·9	10,981	28·3	9807	31·4	12,496	27·7	62,740	33·5
	B 1 to 3 persons to 1 servant	834	1·1	119	·3	411	1·3	437	1·0	1801	·9
	C 1 to 3 persons to 2 servants	210	*·3*	8	—	109	*·2*	185	*·4*	512	*·3*
	D 3 or 4 persons to 3 servants.....	68	*·1*	—	—	40	*·2*	65	*·2*	173	*·1*
		278	·4	8	—	149	·4	250	·6	685	·4
	E 1 or 2 persons to 3 servants, &c. ...	9	—	5	—	25	*·2*	38	*·1*	77	—
	F 1 or 2 persons to 4 servants, &c. ...	14	—	—	—	6	—	18	—	38	—
	G 1 or 2 persons to 5 servants, &c. ...	10	—	—	—	4	—	—	—	14	—
	H 1 or 2 persons to 6 servants, &c. ...	3	—	—	—	5	—	—	—	8	—
		36	—	5	—	40	·2	56	·1	137	—
	Servant	882	*1·2*	130	*·3*	444	*1·4*	552	*1·2*	2008	*1·1*
	GRAND TOTAL...	72,401	100	38,828	100	31,292	100	45,050	100	187,571	100

Without servants... 178,414, or 38,616 families = 4·62 } persons per family.
With servants ..... 7,149, or 1,391 ,, = 5·14 }

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